

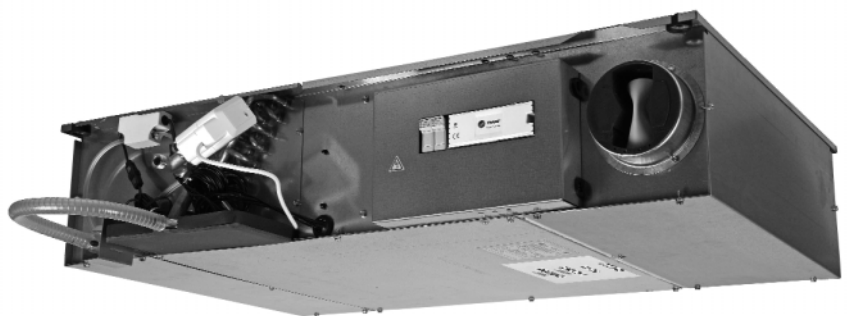


TRANE[®]

*Cooling and Heating
Systems and Services*

UniTrane™ U-Line FEU/FCU ducted fan coil units

Size 100



FIN-PRC010-E4



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Introduction

The UniTrane™ U-Line new generation models FEU and FCU bring innovation to chilled water terminals for office buildings applications with rooms from 10 to 30 m² where access for maintenance is in the corridors or circulation zones. This avoids disturbing occupants during servicing. Power consumption is considerably reduced by the ultra efficient EC motor. Thanks to their very slim design of 225 mm, these terminals can be easily integrated into narrow false ceilings leaving more room for service and maintenance access and for the condensate drainage piping. They operate with low sound levels and are controlled via the intelligent ZN controller series to suit all kinds of building ventilation and air diffusion needs to bring optimal levels of comfort.

General unit description

The U-Line is available in 1 physical cabinet size designed to provide up to 2 kW of sensible cooling capacity at 400 m³/h with 50 Pa of static pressure for 2 and 4 pipe installations with a standard or high efficiency coil.

It has several electric heater capacity options from 500 to 1500 Watt protected via an auto switch overheat thermostat plus a thermo fusible link which both switch off the power supply to the heating elements to protect against operation with partial or complete loss of airflow.

The controls, the water and fresh air connections are located on the opposite side of the air inlet and outlet spigots; these can be factory-configured with the return air on the right and the leaving air on the left, or reverse way to best suit installation possibilities.

The unit is equipped with 2 round spigots for 200 mm standard circular duct size - the best design for nominal 400 m³/h airflow and for direct connection to all kinds of diffusers.

The casing is made of 1 mm sheet metal thickness galvanized steel with 7 µm zinc coating including 5% aluminium providing enhanced corrosion protection with higher resistances to scratches and unequalled resistance of corrosion protection on sheet metal bends and edges.

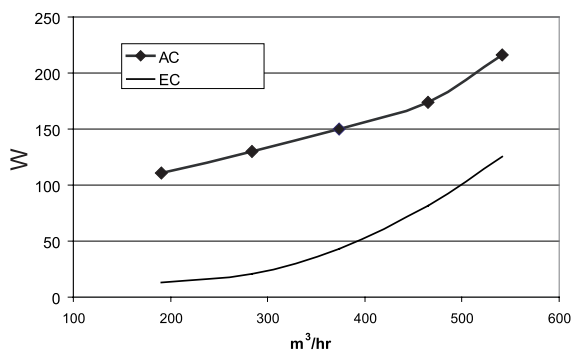
All sheet metal panels are lined inside with 8 mm thermal and acoustic foam insulation made of polyurethane polyester foam having a fire class protection M1 or B according to 89/106/EEC.

EC motor technology

Fans represent a major part of energy consumption in air conditioning systems; the UniTrane™ U-Line FEU model fancoil features an EC motor defined as a brushless commutation of motor windings by means of electronic controls. It has a full load efficiency above 80 % which is twice the one of a standard AC motor and thus throughout the operating range. Overall, EC motor draws an average of 4 times less in watt, providing up to 82% reduction to the annual electricity bills on the terminals.

Alternatively, the UniTrane™ U-Line model FCU features an AC fan motor with 5 equidistant speeds providing good flexibility to best suit the airflow needs based on the required external static pressure.

Figure 1 - EC technology versus AC technology energy consumption



Note: 50 Pa external static pressure at 400 m³/h

Introduction

From a system standpoint, the dynamic energy of the airflow is transformed overall into heat, so the difference in watt.hour between AC and EC motor is less heat load to be balanced by the chiller plant. Considering an average seasonal efficiency of multistage chillers to be around 4 and with 0% to 50% time the system operating in cooling mode, the overall efficiency is increased by another 10% to 20% to reach up to 100%.

The EC motor rotation is controlled via an external 0 to 10 V signal sent to the built-in motor inverter which allows running the fan at any speed. Associated with the appropriate control, it will provide the adequate amount of air and capacity to balance more accurately the cooling and heating loads with no perceivable speed sound shift thus significantly improving thermal and acoustical comfort.

The EC motor external rotor is made of permanent magnet poles and the stator of a unique winding and set of poles mounted on ball bearings which allows for the best design optimization. With an average of 4 times less electricity consumption and with twice the efficiency, the heat loss stresses to the mechanical parts are greatly reduced which results in a much greater reliability of the bearings and of the winding varnish.

A "Total Quality" Product

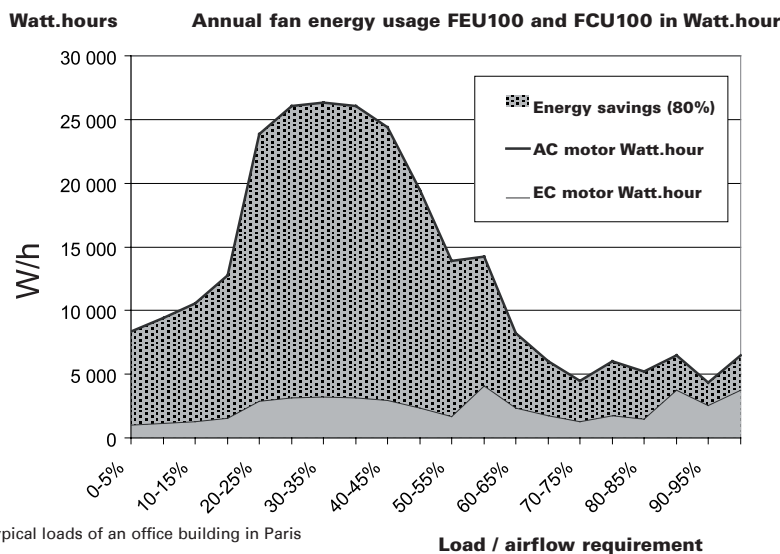
The Total Quality principles are based on the certified ISO9001 Trane Quality Assurance System. It applies to all aspects of the product from Design throughout Supply Chain and operating life. All UniTrane™ U-Line units are manufactured under Trane Quality Standards, thus all units run

through an end of line test to verify the unit proper operation and configuration. In addition, all product performances are verified through the Statistical Process Control, sampling unit from production to go to the performance and acoustical laboratories providing guarantee that all our finished goods will deliver their promises for mutual benefit to our customers, our suppliers, and our company as a whole.

Sound performance

All sound performances are measured in a 300 m³ reverberant room laboratory compliant to ISO 3741 Standard. It is capable of measuring global sound power, inlet and outlet radiated sound in condition of airflow and static pressure to simulate real operating conditions.

Figure 2 - Comparison of motor power consumption at various operating hours and loads



Note: 50Pa external static pressure at 400m³/h

Introduction

EUROVENT Certification



Our engagement in regards of Quality is also supported via the EUROVENT certification program. The airflow, capacities and sound levels of the units are randomly tested by independent laboratories and are listed in the FCP Eurovent Directory, thus guaranteeing very accurate and repeatable performances and data to the customer.

Safety

Safety is of most preoccupation to Trane, to make the installation of the product and its operation and maintenance safer, the UniTrane™

U-Line casings is manufactured without sharp edges; nevertheless it is recommended to wear gloves when handling units and during the installation.

All products are compliant with the Low Voltage Directive 2006/95/EC.

Environment

Trane manufacturing sites in Charmes and Golbey have been certified ISO 14001 since July 2004. To reduce wastes on the job site, units are stacked on a pallet and covered with a recyclable film.

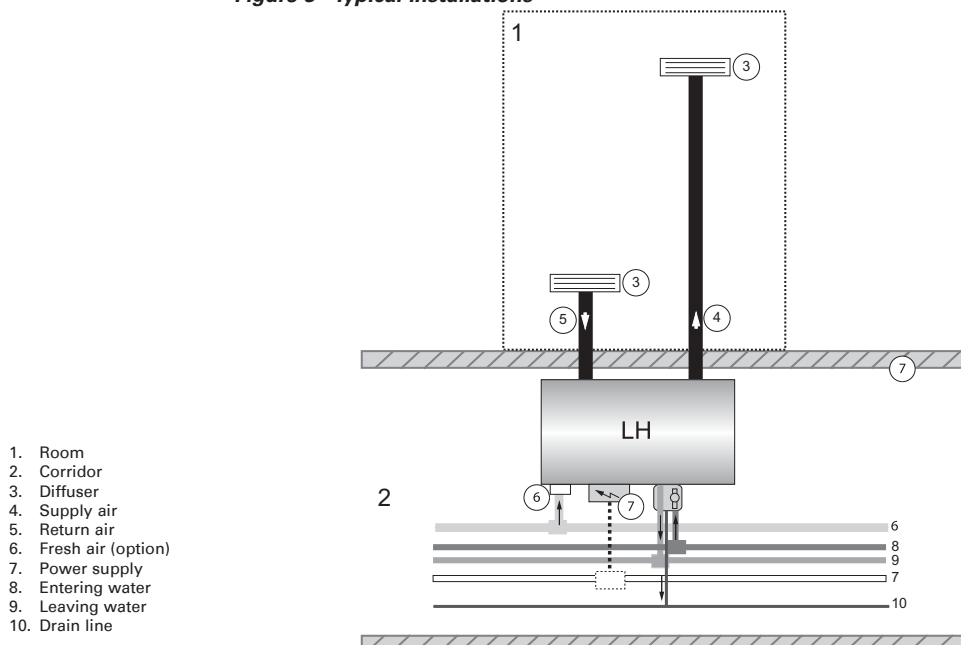
Typical installation

UniTrane™ U-Line is ideally suited for installation in building circulation zones (i.e. corridors), by nature of its design and available static pressure, allowing for simplified installation and maintenance. The chilled and hot

water pipes are remote from the conditioned space. Only the air diffuser(s), the passive elements of the system, are located in the occupied space.

As a system, the UniTrane™ U-Line unit can be connected to a discharge air grille/diffuser and/or a return air grille/diffuser (supplied by Trane or by others) using thermally and acoustically insulated flexible ducting. The pre-treated and filtered fresh air coming from the air handling unit (supplied by Trane or by others) can be connected to the inlet of the unit; the airflow rate can be controlled by a on-site adjustable constant air flow module as an option. The chilled water or the hot water coming from the chiller (supplied by Trane or by others) is connected through a 2-way or a 3-way valve according to the hydraulic circuit installation. The control (supplied by Trane or by others) is managing the overall terminal unit or system.

Figure 3 - Typical installations



Features and Benefits

Unit Chassis

The unit chassis is made from one piece of 1.0 mm thick hot dip galvanized sheet steel. It is thermally and acoustically-lined with a 8 mm thick open-cell polyethylene polyester foam. This insulating foam is M1-certified fire retardant or class B certified according to 89/106/EEC and its remarkable stability over time ensures that it does not emit particles into the airflow, thus giving a very quiet operation and keeping a good air quality.

All removable access panels are accessible from below the unit.

Water Coils

UniTrane™ FEU/FCU fan coils are equipped with high-performance water coils, which are factory tested at 21 bars, for a service pressure of up to 16 bars. They are made of aluminum fins mechanically crimped by expansion onto copper pipes diameter 3/8" (9.50 mm). The fins, WavyIII B-type, specially designed by Trane, allow a high heat transfer ratio. The maximum allowed entering water temperature is 95°C. The 1/2" (15 mm) water connections have an internally threaded nut to facilitate connection to a flat seal valve body. The water coils feature air vents and drains as standard with easily accessible slotted/hexagonal plugs. They are easily accessible from underneath and are removable from underneath or from the side of the unit. The four types of coils available in the FEU/FCU range are 2-pipe standard capacity, 2-pipe high capacity and 4-pipe.

- Cooling or heating with the 2-pipe standard capacity coil
- Cooling or heating with the 2-pipe high capacity coil allowing higher cooling or heating capacity for the same unit casing (option)

- Cooling and heating with the 4-pipe standard capacity coil (option)
- Cooling and heating with the 4-pipe high capacity coil allowing higher cooling and heating capacity for the same unit casing (option).

Figure 4 - 2-pipe standard efficiency straight coil



Figure 5 - 2-pipe high efficiency inclined coil



Features and Benefits

FEU Fan Motor Assembly

The unit is equipped with centrifugal forward curved single scroll fan with double inlet, coupled to an electronically commuted brushless motor which performances have been carefully selected to allow the fan matching different system pressure and airflow requirements.

Brushless technology allows an operation of motor with less mechanical constraints, thus wear is minimized and motor maintenance considerably limited.

FCU Fan Motor Assembly

The unit is equipped with a centrifugal forward curved single scroll fan with double inlet. The multi-wound motor has 5 speeds that have been carefully chosen to allow the fan matching different system pressure and airflow requirements.

The unit is able to provide up to 80 Pa of external static pressure.

Condensate Tray

Keeping hygiene and security in mind, the units were designed with a condensate tray allowing for the evacuation of condensates coming from the water coil and the cooling valve. This tray minimizes the quantity of residual water inside the unit. It is a one-piece structure made of hot dip galvanized sheet steel, and insulated with polyethylene self-extinguishing foam (5 mm thick, fire retardant CSTB M1), and has a 16 mm external diameter outlet provided for the drainage. The evacuation of the condensates is assisted thanks to its position downward from the fan, in other words, in the high air pressure zone. This position avoids having foul air drawn through the system of condensate evacuation. The condensate tray is easily accessible and removable from underneath the unit, without disconnecting the ductwork and without putting the unit down.

Features and Benefits

Control Panel

The control panel is made of hot dip galvanized sheet steel and was designed to not only adapt to Trane controls, but also to other controls on the market. Turning 1 screw gives easy access to the control panel with its quick connection terminal block for accurate commissioning of air volumes. It is built according to the standard IEC 335-2-40, its protection class of IP23 and maintains the full earth continuity.

The wiring diagram of the controls is provided with the unit. All factory-supplied and mounted controls (see options) are tested.

Figure 6 - Control panel



Features and Benefits

Unit Handing

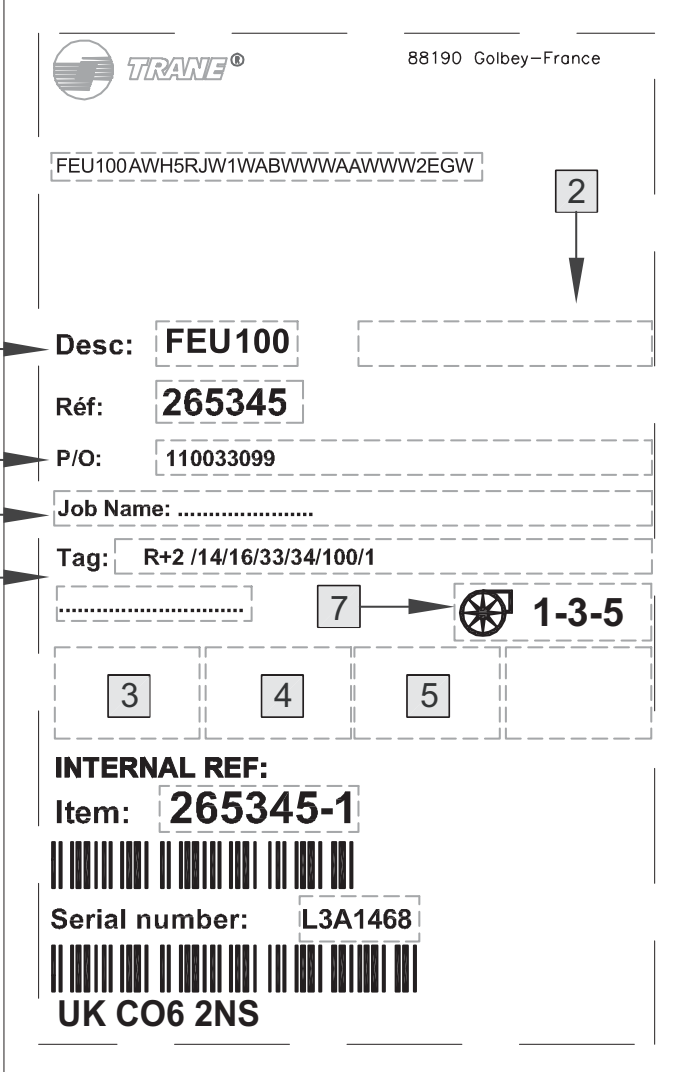
The units are available in two different configurations to adapt to any job site configuration (left hand and right hand).

Electrical and water connections are always on the opposite side of the air connections.

Unit Identification

Reducing the time spent on the job site to identify the right configuration, each unit arrives with an identification sticker with pictograms. Each pictogram clearly indicates important information such as the order number, the unit model & size, the coil type, the presence of an electric heater, the unit handing and the factory speed wiring. In addition to this standard information, customized tags can also be printed on the sticker to furthermore ease the unit identification and localization.

Figure 7 - Unit identification sticker



TRANE® 88190 Golbey-France

FEU100AWH5RJW1WABWWWAWWW2EGW

2


1 Desc: FEU100

8 Réf: 265345

9 P/O: 110033099

Job Name:

10 Tag: R+2 /14/16/33/34/100/1

7  1-3-5

3 4 5

INTERNAL REF:
Item: 265345-1


Serial number: L3A1468


UK CO6 2NS


Features and Benefits


① = Indicates the unit description

② = Indicates the ZN control configuration program


2  2-pipe cooling only


2  2-pipe heating only

2  2-pipe cooling + electric heater

2  2-pipe changeover, 2-way valve

2  2-pipe changeover, 3-way valve

2  2-pipe changeover + electric heater, 2-way valve


2  2-pipe changeover + electric heater, 3-way valve


4 4-pipe

 Zone control

 Cascade control


③ = Indicates the unit handing


 Water Right hand + Electric Right connection


 Water Left hand + Electric Left connection

④ = Indicates the coil type


 Standard coil


 2-pipe high capacity coil


 4-pipe standard coil

 4-pipe high capacity coil

⑤ = Indicates the presence of an electric heater


 Electric heater. If nothing, no electric heater

 Electric heater with electro-mechanical relay

 Electric heater with solid-state relay

⑦ = Indicates the factory-wired fan speeds (AC motor) or presence of EC motor

 3 - 4 - 5
3 = Low speed
4 = Medium speed
5 = High speed

 Indicates presence of EC motor

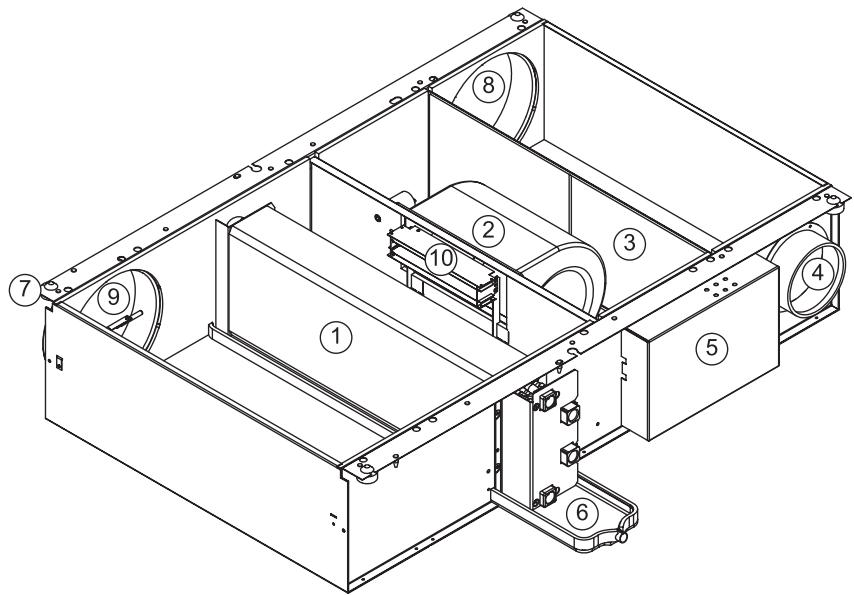
⑧ = Indicates customer order number (max 25 alphanumeric characters)

⑨ = Indicates job name (max 25 alphanumeric characters)

⑩ = Indicates personal customer tag (max 22 alphanumeric characters)

Unit description

Figure 8 - Unit view from the top



- 1 Chilled water coil, Hot water coil (Option)
- 2 Fan
- 3 Air filter (Option)
- 4 Fresh air inlet spigot (factory mounted option or accessory) - \varnothing 100 mm or 125 mm - with or without fresh air controller
- 5 Control box
- 6 Drain Pan
- 7 Anchoring clips and rubber insulators
- 8 Air intake spigot
- 9 Discharge Spigots
- 10 Electric heater (Option)

Options

Air Filter

The unit can be factory-equipped with a cleanable G3 filter (85% gravimetric efficiency), made of a 8 mm-thick polyester media mounted on a metallic frame. It is M1-certified fire retardant, is easily removable without any tool from the back or from underneath according to the configuration of the unit and contribute to maintain a good air quality level within the air-conditioned space.

Fresh Air Inlet

It is possible to equip the unit with a fresh air connection (\varnothing 100 mm or \varnothing 125 mm). The connection is located at the inlet of the unit. Moreover, a fresh air flow controller module can be installed inside the fresh air connection. The module ensures a constant fresh air flow from the air handling unit to be mixed with the circulated air to ensure a hygienic renewal of air in the room. Its choice depends on the volume of the room to air-condition.

Several possibilities are available:

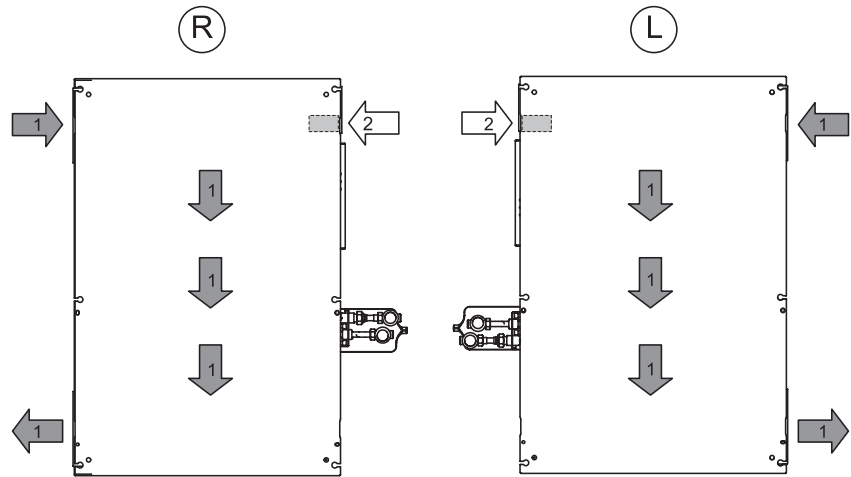
- Duct connection \varnothing 100 mm only (no fresh air flow controller)
- Duct \varnothing 100 mm + a 30 m³/h fixed fresh air flow controller (-10/+20%)
- Duct \varnothing 100 mm + a 45 m³/h fixed fresh air flow controller (-10/+20%)
- Duct connection \varnothing 125 mm only (no fresh air flow controller)
- Duct \varnothing 125 mm + an 60-130 m³/h adjustable fresh air flow controller (-10/+20%)

Static pressure range: for 50 to 200 Pa

Note: In all cases, the fresh air connection must be connected to a filtered and pre-treated air supply (e.g. air handling unit).

Options

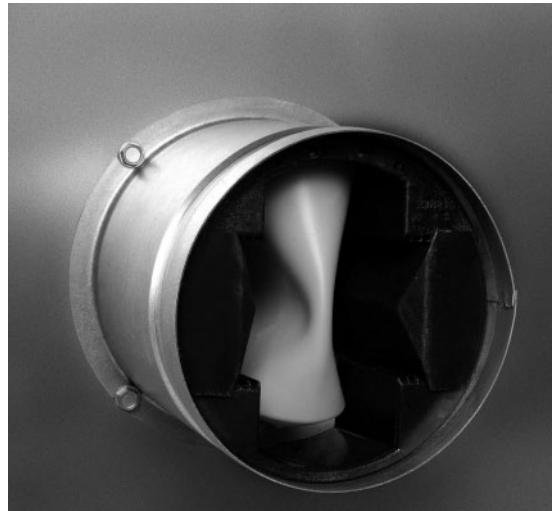
Figure 9 - Fresh air inlet with the adjustable airflow controller



L = Left hand configuration
R = Right hand configuration
1 = Airflow
2 = Fresh air intake option

Options

Figure 10 - Fresh air inlet with the adjustable airflow controller



Adjustment of the 60-130 m³/h fresh air flow controller

The setting of the 60-130 m³/h fresh air flow controller is easy to modify on the job site. By moving the two side baffles, it is possible to adjust the airflow at four different values: 60, 75, 90 or 130 m³/h (Maximum constant airflow).

Electric heater

The electric heater is made of bare wire resistive elements which have an excellent heat transfer characteristic. As they exhibit very low residual heat retention, there is no need for the fan to run on after switching off the electric heater.

Heating elements are factory-mounted inside the unit directly at fan air discharge ahead of the water coil. Several capacities are available from 0.5 kW to 1.5 kW. This allows for use as either additional heating or as the principal heating source.

Each heating element is equipped with two safety devices as standard: one automatic reset overheat thermostat (trip-off temperature 60°C) and one thermal fuse (trip-off temperature 110°C). When the thermal fuse has tripped-off, the heating element has to be changed.

Note: If the electric heater is managed by a controller supplied by others, it is mandatory to lock it if the fan is switched off.

CAUTION! With free-issued controls, be sure to lock the electric heater when the fan is switched off.

Options

Figure 11 - Electric heater - FEU/FCU

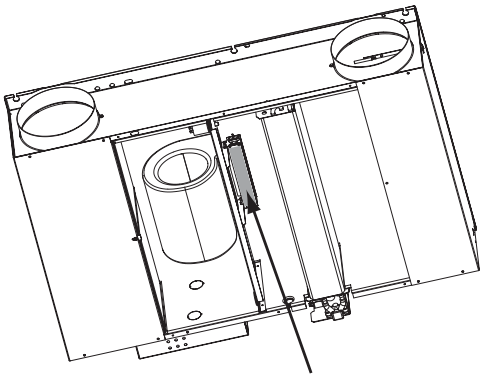


Table 1 - Minimum airflow (m³/h) in order to not damage heating elements - FEU/FCU

Electric heater capacity (W)	Minimal airflow rate (m ³ /h)
500	90
750	135
1000	185
1500	275

Options

Condensate pump

As an option, units can be supplied with a factory-mounted, quiet operation condensate pump. The pump is fitted beside the condensate tray, and can afford a maximum pump height of 6 m.

The condensate pump is equipped with a floating sensor which will stop the chilled water flow in the water coil as soon as the alarm level is reached, while continuing to evacuate condensate water. The condensate pump option is increasing the height of the unit by 20 mm. As the alarm contact is a voltage-free contact, it can be also used for other purposes (information to a person from the maintenance).

Condensate pump 1 (for on/off controls):

Power supply: 230 V/50 Hz/1 Ph
 Max flow rate (+/- 10%) : 8 l/h
 Sound level (at 1m distance) : < 28 dBA
 Alarm contact: Relay NC, 250 V 8A resistive

Nominal input power: 6 W (max 10 W)
 Max recommended discharge height : 6 m
 Fluid temperature: 0°C to 35°C (condensate water)
 CE or UL std 778 certified

Condensate pump 2 (for ZN control):

Power supply: 230 V/50 Hz/1 Ph
 Max flow rate (+/- 10%) : 10 l/h
 Sound level (at 1m distance) : < 21 dBA

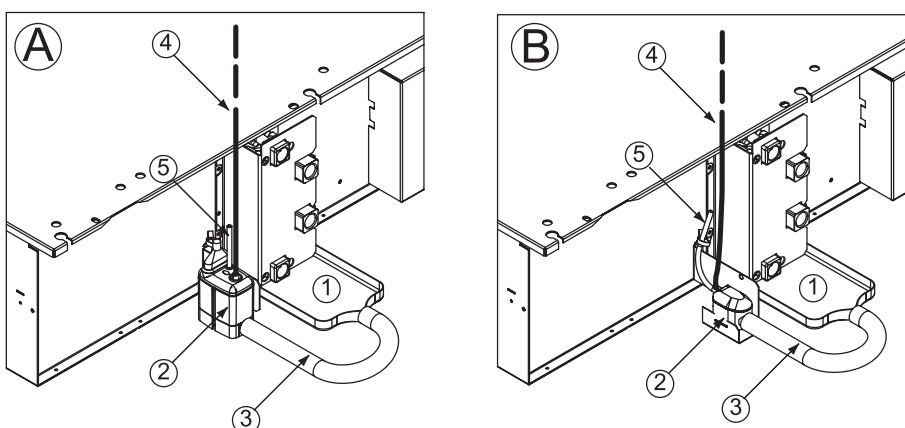
Nominal input power: 19 VA
 Max recommended discharge height : 6 m
 Fluid temperature: 0°C to 35°C (condensate water)

Alarm contact: Relay NC & NO, 250 V 5A resistive NF EN 60 950; 70/23/CEE; 89/336/CEE

Condensate pump sensor:

'Start' level: 10 to 15 mm
 'Stop' level: 10 mm
 'Alarm' level: 17 mm

Figure 12 - Condensate pump on unit



- 1 = Condensate tray
- 2 = Condensate pump
- 3 = Condensate pump suction
- 4 = Vent
- 5 = Condensate pump discharge, towards evacuation
- A = Condensate pump (1) on unit without ZN control
- B = Condensate pump (2) on unit with ZN control

Options

Table 2 - Condensate pump performances (l/h)

Pump	Discharge height - H	Discharge length - L			
		5 m	10 m	20 m	30 m
1	1 m	9.5	9.0	8.2	7.4
1	2 m	7.0	6.5	5.7	4.9
1	3 m	5.0	4.6	3.9	3.4
1	4 m	4.0	3.6	3.1	2.8
2	1 m	10	9.5	8	7
2	2 m	9	8	7	6
2	3 m	8	7	6	5
2	4 m	6.5	5	4	4

Options

Epoxy coating

The epoxy coating option is recommended when the unit has to be installed in an aggressive/corrosive atmosphere (areas with chemical industries, close to the sea, etc...). This option improves the life span of the water coil by having a specific coating on the aluminum fins.

Fan speed selection - FCU

ZN525 speed selection for EC motors

- 1 - Minimum airflow
- 2 - Maximum airflow
- 3 - Minimum airflow for heating with electric heater

Speed will vary automatically within these airflow limits, or the use of 3 fixed fan speeds can be manually selected from the ZSM wall-mounted thermostat. See control options.

Fan speed selection - FEU

Three speeds out of 5 available on the fan motor can be selected according to your needs and application. If necessary, fan speeds can be adjusted on site directly from the multi-position terminal block or from the quick connector in the control panel.

Unit fuse

The fuse is optional with all on/off controls and delivered as standard with all modulating and communicating controls. If the unit is fitted with an electric heater, two fuses will be provided otherwise a single fuse protects the entire unit. Table 4 shows the fuse size depending on the unit configuration.

Table 3 - Fuse size (A)

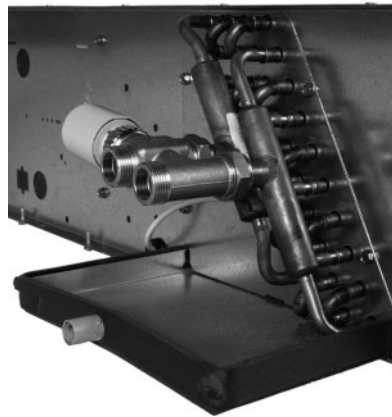
	Without electric heater	With electric heater ≤ 1.5 kW
On/off controls	4	10
ZN control	4	10

Options

Valve package

Valve package options are factory-mounted and leak-tested at 6 bars. Depending on the application, a 2-way or a 3-way/4-port valve is available, and an on/off or a modulating valve can be chosen.

Figure 13 - Valve package



Actuators

Hot wax actuator - (compatible with Trane on/off wall thermostats)

Power supply: 230 VAC
(±10%)/50Hz/1Ph

Initial current: 0.7 A

Permanent current: 0.013 A

Power: 3 W

Maximum stroke: 2.5 mm

Ambient temperature: 0-50°C

Protection standard:

- IP43 for vertical installations, actuator pointing upwards
- IP40 for horizontal installations

Opening time: 4 min.

Closing time: 4-6 min. depending on heating time

Options

Modulating actuator (hot wax or 3 floating point) (compatible with Trane ZN control)

Power supply: 230 VAC
(±10%)/50Hz/1Ph

Power: 3 W

Maximum stroke: 6.5 mm

Protection standard:

- IP43 for vertical installations, actuator pointing upwards.
- IP40 for horizontal installations.

Ambient temperature: 0-50°C

Permanent current: 0.125 A

Valve bodies

On/Off 2-way and 3-way/4port valve

Action: Normally closed

Water temperature: 2-120°C

Suitable medium: Water, with maximum 50% glycol

Static pressure: 16 bar, PN 16

Connection diameter: 1/2" & 3/4", flat faced

Valve capacity:

(Cooling and heating, 2-way) kv = 1.0, 1.6 or 2.5

(Cooling and heating, 3-way/4port) kv = 1.0, 1.6 (direct way), cv = 0.63, 1.0 or 1.6 (bypass)

Differential pressure: 180 kPa (2-way), 150 kPa (3-way/4port)

Maximum stroke: 2.5 mm

Flow characteristic: Equal percentage

Body: nickel-plated brass

2-way and 3-way / 4-port modulating valve

Action: Normally closed

Water temperature: 2-120°C

Suitable medium: Water, with maximum 50% glycol

Static pressure: 16 bar, PN16

Connection diameter: 1/2" & 3/4", flat faced

Valve capacity:

(Cooling and heating, 2-way) kv = 1.0, 1.6

(Cooling and heating, 3-way/4port) kv = 1.0, 1.6 (direct way), cv = 0.63, 1.0 or 1.6 (bypass)

Differential pressure: 180 kPa (2-way), 150 kPa (3-way/4port)

Maximum stroke: 6.5 mm

Flow characteristic: Equal percentage

Body: brass

Options

On/off controls

Different wall mounted control packages selected to match the designated valve package are available. Each system is customised to the customer requirements and provides room air thermostats, motor speed control switch, summer/winter switch, electric heater command and overheat protection thermostat (according to the unit configuration).

Unit mounted terminal strip is provided for customers supply voltage wiring. All controls are factory-tested. The following unit configurations are supported:

- 2-pipe cooling
- 2-pipe cooling + electric heater
- 2-pipe changeover + electric heater
- 2-pipe heating
- 2-pipe changeover (manual or automatic)
- 4-pipe cooling and heating

Two specific controls have been developed for a 2-pipe changeover + electric heater application with a pilot relay.

- In the first case, the management of the electric heater is centralized meaning that the pilot relay (230 V) is energized by a central system when the electric heater is authorized to operate.
- In the second case, the management is local meaning that the local changeover sensor is locking the electric heater if the hot water coil is sensed in the entering pipe.

Note: For more details about on/off valves, refer to the manual CNTSVX14B.

Intelligent LonTalk (ZN) control

The Tracer™ ZN525 (for EC motor FEU units) and ZN 523 (for AC motor FCU units) are open protocol, micro-processor based direct digital controllers that are dedicated to the control and the optimisation of fan coil units operation through PI, proportional and integral algorithms.

The 'Zone' configuration controls ambient temperature in association with a non-modulating valve. It provides a high level of comfort.

The 'Cascade' configuration controls ambient and air supply temperature in association with modulating valves it will avoid risk of cold air drafts maintaining the supply air temperature above 14°C such improving the comfort level.

Both have an intelligent fan speed and set point control strategy in minimizing the fan speed change versus the water flow to minimize fan sound shift and which provide an unequal fast response time to meet the comfort ambient temperature.

Specific to ZN525, used exclusively for EC motor, it associates simultaneous modulation of water flow and variable fan speed via a 0 to 10 V signal to adapt to the exact cooling and heating loads, thus thermal and acoustic comfort is improved. It will turn off the power supply to the electronic EC motor controller saving another 5 Watt when the unit is turned off. For electric heater operation, it will avoid to trip off the overheat safety devices maintaining the airflow high enough. The Trane ROVER™ configuration software will allow from a laptop further airflow adjustment on site via serial link and terminal addresses without need to access to the unit for speed adjustment with hardware change such saving a lot of service time

Options

and money still without disturbances to the occupancies.

All ZN controllers are factory installed, pre-commissioned and tested, resulting in a highly integrated product, notably reducing installation and commissioning time.

A modulating valve using a 3 floating point actuator can be connected to the controller.

The following configurations are supported by the controllers:

- 2-pipe cooling
- 2-pipe cooling + electric heater
- 2-pipe heating
- 2-pipe changeover (manual or automatic)
- 4-pipe cooling and heating

A Solid State relay option is available to control electric heater without perceivable electromechanical relay switch sound.

The intelligent ZN controls offer the following benefits:

- Built-in electrical protection
- Adjustable local set point max - min limits
- Intelligent management of valve position and fan speed. Valve must be fully open before changing the fan speed (acoustic comfort optimization)
- Control algorithms based on ambient and discharge air temperatures
- Discharge air temperature (low and high limit control)

Figure 14 - Flexible 1/2" hose pipes



- Automatic changeover based on ambient air - entering water temperatures differential (+/- 2.5K)
- Automatic stand-alone changeover (2-way or 3-way valve)
- 2 operating modes in stand-alone application: comfort and reduced
- Built-in adjustable timed override function
- After a power up in the building, units automatically staggered from 5-32 seconds
- Built-in condensate overflow protection
- Built-in output test capability
- Built-in diagnostic indicator

The ZN controls are compatible with a full range of users wall interface, including an infra-red version delivered as accessories:

ZSM10 allows adjusting with buttons the fan speed to Off, Auto or 3 fixed speeds, ambient temperature and occupancy.

ZSM11 has a digital display and 3 buttons to access all comfort functionalities

ZSM31 Has a digital display with same functionalities than ZSM11 but with the synchronization function which send the new settings to all similar ZSM31 installed on the same group of terminals

As all unit with ZN controller are equipped with a return air temperature sensor it is possible to control ambient temperature not from the wall thermostat interface but from the return air to the unit.

All ZSM will ship separately from the unit.

Note: For more details about the LonTalk ZN controls, please refer to the manual CNT-SVX13B.

Free issued controls

In addition to Trane's proposed controls, free issued controls and valves by the customer can be factory fitted and wired. Please refer to your local Sales Office for more details.

Empty Control Box

When the control is going to be fitted on site, an empty control box can be ordered. It is designed to receive major controls on the market.

Inside dimensions (mm): 280 X 185

Water coil, fan motor access

Thanks to this option, it is very easy to remove the water coil or the fan motor assembly. A system allows for simple removal of these parts from the inside of the unit, thus reducing the number of ceiling tiles to remove.

Flexible hose pipes

Flexible connection hoses are used to connect the unit to the installation. Two insulated hoses are supplied per circuit. Two for a 2-pipe system, and four for a 4-pipe system. The flexible connection hoses are shipped with each unit, but are not factory-mounted. They are guaranteed for ten years.

According to the unit size, bent 1/2" ISO R7 gas male-female, 400mm long and/or straight 3/4" ISO R7 gas male-female, 500mm long non-insulated flexible connection hoses are provided.

Accessories

On/off wall thermostats - for AC motor units FCU only

Five models of wall mounted switch / thermostats are available - two models for fan control only, and three models for the control of thermal valves and/or electric heater option:

- Remote fan switch (L): This device is used to control the three fan speed of the unit only.
- Remote, wall thermostat (M): This thermostat is used to control the fan either in cooling or heating mode.
- Remote, wall thermostat (N): This thermostat is used to control one or two on/off valve(s) or one on/off valve + an electric heater. The fan is running continuously. The changeover between the summer and the winter mode is manual.
- Remote, wall thermostat (P & E): These thermostats are used to control one or two on/off valve(s) or one on/off valve + an electric heater. The fan is running continuously. The changeover between the summer and the winter mode is automatic.

It has 2 heating stages. When heating with water is not available, heating with electric heat will be activated. The two do not operate simultaneously.

Table 4 - Thermostat descriptions

Features	Fan switch 'L'	Wall Thermostat 'M'	Wall Thermostat 'N'	Wall Thermostat 'P'	Wall Thermostat 'E'
On/off switch	X	X	X	X	X
Manual 3 speed fan switch	X	X	X	X	X
1 stage thermostat + summer/winter switch		X	X		
2 stage thermostat (auto changeover)				X	X

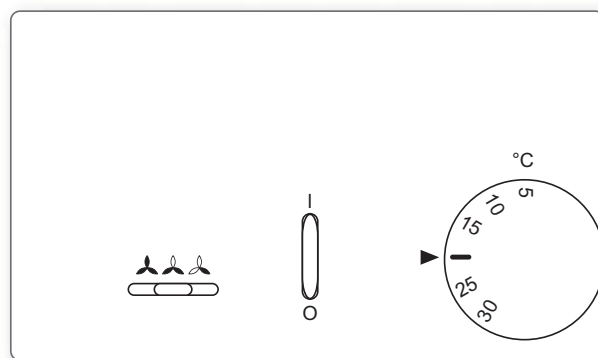
Accessories

Applications (FCU only)	Fan switch 'L'	Wall Thermostat 'M'	Wall Thermostat 'N'	Wall Thermostat 'P'	Wall Thermostat 'E'
2-pipe cooling	Fan only	Fan only	Yes, fan runs continuously	Yes, fan runs continuously	Yes, fan runs continuously
2-pipe heating	Fan only	Fan only	Yes, fan runs continuously	Yes, fan runs continuously	Yes, fan runs continuously
2-pipe cooling + electric heater			Yes, fan runs continuously	Yes, fan runs continuously	Yes, fan runs continuously
2-pipe changeover (manual)	Fan only	Fan only	Yes, fan runs continuously		
2-pipe changeover (automatic)	Fan only	Fan only		Yes, fan runs continuously	Yes, fan runs continuously
2-pipe changeover + electric heater (automatic)				Yes, fan runs continuously	
4-pipe	Fan only	Fan only	Yes, fan runs continuously	Yes, fan runs continuously	Yes, fan runs continuously

Figure 15 - Thermostat type L, M/N, and P



Figure 16 - Thermostat type E



The recommended cable size is 1 mm.

For more information about wiring, refer to the wiring diagrams.

Accessories

Fresh Air Controllers

The fresh air controller (see description in Options section) is also available as a site-installed accessory. Five possibilities are available as a kit:

- Duct connection \varnothing 100 mm only (no fresh air flow controller)
- Duct \varnothing 100 mm + a 30 m³/h fixed fresh air flow controller (-10/+20%)
- Duct \varnothing 100 mm + a 45 m³/h fixed fresh air flow controller (-10/+20%)
- Duct connection \varnothing 125 mm only (no fresh air flow controller)
- Duct \varnothing 125 mm + an 60-130 m³/h adjustable fresh air flow controller (-10/+20%)

FCD/FED units have pre-punched holes (\varnothing 125 mm) at the air inlet and the air outlet. These holes can be used if a fresh air connection needs to be added on the job site. In this case, it is necessary to cut the insulation that is behind the metallic part held by four pins. A kit based on one of these above possibilities can then be installed.

Rubber isolators

A set of 4 pieces can be ordered with the unit. These rubber isolators reduce potential vibrations and avoid creating unexpected noise.

Accessories

Condensate pump kit

A condensate pump can be installed on the job site. The kit includes the same components as for the condensate pump 2 option and as a consequence the same features.

Valve connection kit - straight standard efficiency coil

When the water valve is supplied by others, this kit allows connecting the valve to the unit using copper elbows. It is compatible with the majority of 2-way and 3-way/4-port water valves of the market (symmetric configuration).

Valve connection - high efficiency inclined coil

No kit is needed on the inclined high efficiency coil - the connections are ready to fit the valve on site.

Conical connection kit

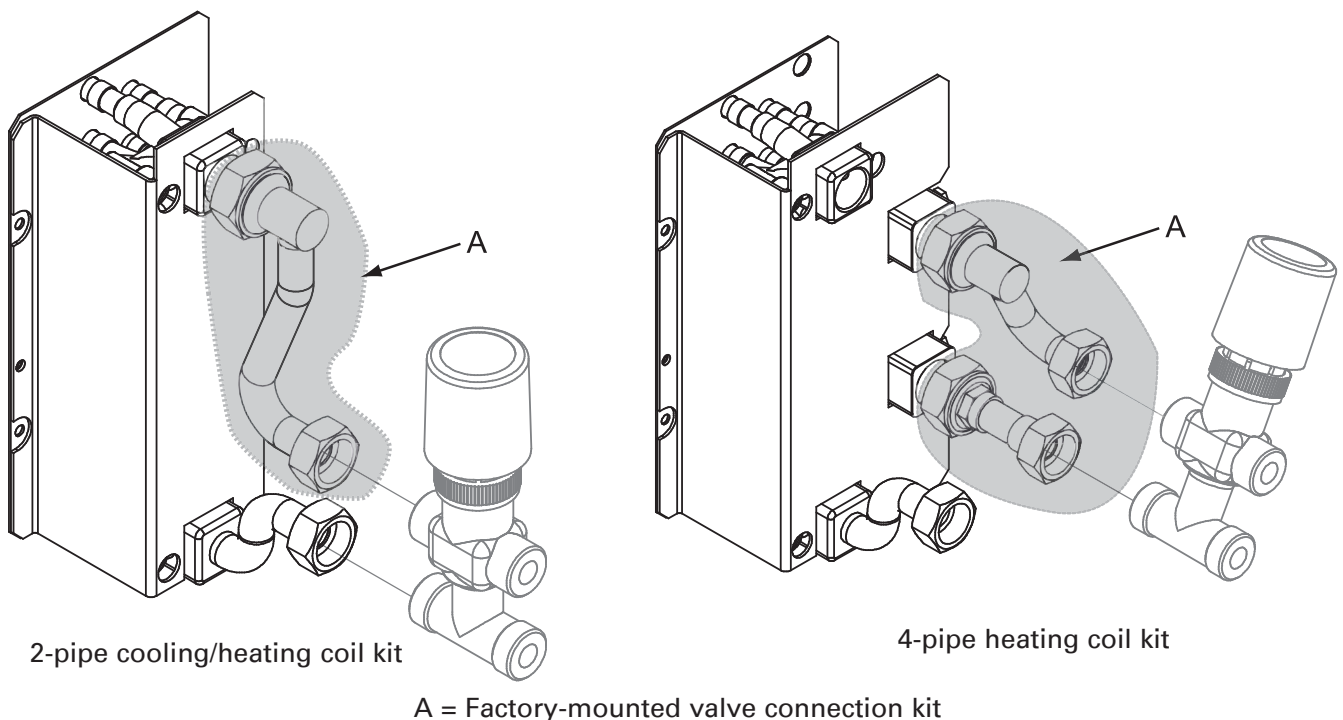
This kit allows connecting the unit to the hydraulic circuit using a conical connection instead of a flat faced connection.

Spare EU3 filter

A spare filter can be ordered with a unit and will replace the one delivered with the unit after the start up of the installation.

It is the same filter that can be ordered as an option (G3, 85% gravimetric efficiency)

Figure 17 - Valve connection kit components



General data

Table 5 - 2-pipe reversible standard coil, at 50 Pa, 400 m³/h

Unit		FEU 100			FCU 100		
ESP		8	43	105	11	43	90
Motor Voltage (EC motor units)	(V)	3	6	10	-	-	-
Speed number (AC motor units)		-	-	-	1	3	5
Airflow	(m ³ /h)	160	370	578	190	374	542
Cooling mode		Air inlet conditions : 27°C/19°C.Water : 7/12°C Constant delta T°					
Total capacity	(kW)	1.25	2.50	3.47	1.49	2.46	3.16
Sensible capacity	(kW)	0.89	1.85	2.68	1.09	1.85	2.45
Water flow	(l/h)	216	432	598	258	424	545
Water pressure drop	(kPa)	5	16	28	7	16	24
Water content	(l)	1.02					
Water connections		1/2" ISO R7 female gas					
Heating mode		Air inlet : 20°C. water inlet : 50°C.Water flow from cooling mode					
Total capacity	(kW)	1.38	2.90	4.21	1.73	3.02	4.06
Water flow	(l/h)	216	432	598	258	424	545
Water pressure drop	(kPa)	5	16	28	6	13	20
Electric heater							
Min/ Max electric heater capacity	(W)	500 to 1500 W					
Absorbed current @ min/Max capacity	(A)	2.2/6.5					
Fan motor							
Absorbed power	(W)	7	44	152	111	150	216
Maximum external static pressure	(Pa)	50	100	200	50	100	200
Sound levels							
Inlet sound power level (1)	(dB(A))	29	46	55	31	45	54
Outlet sound power level (1)	(dB(A))	31	48	57	34	48	56
Radiated sound power (1)	(dB(A))	31	48	58	33	48	56
Global sound power (1)	(dB(A))	35	52	62	38	52	60
Sound pressure level (2)	(dB(A))	15	32	42	18	32	40
NC levels (2)		10	26	35	12	26	33
NR levels (2)		11	28	36	14	28	35

(1) Levels according to Eurovent specification 8/2 (ISO 3741/88) and Eurovent FCP Certification

(2) Values calculated from sound power levels with a hypothetical acoustic attenuation of 20 dB.

General Data

Table 6 - 2-pipe reversible high efficiency coil, at 50 Pa, 400 m³/h

Unit	FEU 100				FCU 100			
ESP	8	46	112	10	49	107		
Motor Voltage (EC motor units)	3	6	10	-	-	-		
Speed number (AC motor units)	(V)	-	-	1	3	5		
Airflow	(m ³ /h)	165	384	599	183	395	584	
Cooling mode	Air inlet conditions : 27°C/19°C. Water : 7/12°C Constant delta T°							
Total capacity	(kW)	1.31	2.87	4.21	1.49	2.87	3.96	
Sensible capacity	(kW)	0.92	2.06	3.11	1.07	2.10	2.96	
Water flow	(l/h)	226	494	725	256	495	683	
Water pressure drop	(kPa)	4	14	28	5	14	25	
Water content	(l)		1.02			1.72		
Water connections	1/2" ISO R7 female gas							
Heating mode	Air inlet : 20°C. water inlet : 50°C. Water flow from cooling mode							
Total capacity	(kW)	1.43	3.17	4.83	1.68	3.35	4.78	
Water flow	(l/h)	226	494	725	256	495	683	
Water pressure drop	(kPa)	4	14	28	6	17	29	
Electric heater								
Min/ Max electric heater capacity	(W)						500 to 1500 W	
Absorbed current @ min/Max capacity	(A)						2.2/6.5	
Fan motor								
Absorbed power	(W)	7	44	152	107	148	218	
Maximum external static pressure	(Pa)	50	100	200	50	100	200	
Sound levels								
Inlet sound power level (1)	(dB(A))	28	46	55	34	47	54	
Outlet sound power level (1)	(dB(A))	31	48	57	37	49	56	
Radiated sound power (1)	(dB(A))	30	48	57	36	49	56	
Global sound power (1)	(dB(A))	35	52	61	41	53	60	
Sound pressure level (2)	(dB(A))	15	32	41	21	33	40	
NC levels (2)		9	27	34	15	27	33	
NR levels (2)		10	28	36	17	29	35	

(1) Levels according to Eurovent specification 8/2 (ISO 3741/88) and Eurovent FCP Certification
 (2) Values calculated from sound power levels with a hypothetical acoustic attenuation of 20 dB.

General Data

Table 7 - 4-pipe reversible standard coil, at 50 Pa, 400 m³/h

Unit		FEU 100			FCU 100		
ESP		8	43	105	11	43	90
Motor Voltage (EC motor units)	(V)	3	6	10	-	-	-
Speed number (AC motor units)		-	-	-	1	3	5
Airflow	(m ³ /h)	160	370	578	190	374	542
Cooling mode		Air inlet conditions : 27°C/19°C. Water : 7/12°C Constant delta T°					
Total capacity	(kW)	1.25	2.50	3.47	1.49	2.46	3.16
Sensible capacity	(kW)	0.89	1.85	2.68	1.09	1.85	2.45
Water flow	(l/h)	216	432	598	258	424	545
Water pressure drop	(kPa)	5	16	28	7	16	24
Water content	(l)		1.02			1.02	
Water connections		1/2" ISO R7 female gas					
Heating mode		Air inlet : 20°C. water inlet : 50°C. Water flow from cooling mode					
Total capacity	(kW)	1.26	1.83	2.36	1.46	1.94	2.35
Water flow	(l/h)	108	154	190	116	155	184
Water pressure drop	(kPa)	2	3	4	2	3	4
Electric heater							
Water content	(l)	0.21					
Water connections		1/2" ISO R7 female gas					
Fan motor							
Absorbed power	(W)	7	44	152	111	150	216
Maximum external static pressure	(Pa)	50	100	200	50	100	200
Sound levels							
Inlet sound power level (1)	(dB(A))	29	46	55	31	45	54
Outlet sound power level (1)	(dB(A))	31	48	57	34	48	56
Radiated sound power (1)	(dB(A))	31	48	58	33	48	56
Global sound power (1)	(dB(A))	35	52	62	38	52	60
Sound pressure level (2)	(dB(A))	15	32	42	18	32	40
NC levels (2)		10	26	35	12	26	33
NR levels (2)		11	28	36	14	28	35

(1) Levels according to Eurovent specification 8/2 (ISO 3741/88) and Eurovent FCP Certification

(2) Values calculated from sound power levels with a hypothetical acoustic attenuation of 20 dB.

General Data

Table 8 - 4-pipe reversible high efficiency coil, at 50 Pa, 400 m³/h

Unit	FEU 100			FCU 100		
ESP	8	46	112	10	49	107
Motor Voltage (EC motor units)	(V)	3	6	10	-	-
Speed number (AC motor units)		-	-	-	1	3
Airflow	(m ³ /h)	165	384	599	183	395
Cooling mode	Air inlet conditions : 27°C/19°C.Water : 7/12°C Constant delta T°					
Total capacity	(kW)	1.39	2.80	3.90	1.57	2.81
Sensible capacity	(kW)	0.96	2.01	2.92	1.11	2.06
Water flow	(l/h)	239	483	673	270	485
Water pressure drop	(kPa)	8	28	49	10	28
Water content	(l)		1.02			1.3
Water connections	1/2" ISO R7 female gas					
Heating mode	Air inlet : 20°C. water inlet : 50°C.Water flow from cooling mode					
Total capacity	(kW)	1.59	2.47	3.28	1.77	2.61
Water flow	(l/h)	137	209	270	144	213
Water pressure drop	(kPa)	4	9	13	5	9
Electric heater						
Water content	(l)		0.21			0.3
Water connections	1/2" ISO R7 female gas					
Fan motor						
Absorbed power	(W)	7	44	152	107	148
Maximum external static pressure	(Pa)	50	100	200	50	100
Sound levels						
Inlet sound power level (1)	(dB(A))	28	46	55	34	47
Outlet sound power level (1)	(dB(A))	31	48	57	37	49
Radiated sound power (1)	(dB(A))	30	48	57	36	49
Global sound power (1)	(dB(A))	35	52	61	41	53
Sound pressure level (2)	(dB(A))	15	32	41	21	33
NC levels (2)		9	27	34	15	27
NR levels (2)		10	28	36	17	29

(1) Levels according to Eurovent specification 8/2 (ISO 3741/88) and Eurovent FCP Certification

(2) Values calculated from sound power levels with a hypothetical acoustic attenuation of 20 dB.

General Data

Voltage data

Electric heaters shall run with the minimum airflow described in following table. To maintain this minimum airflow the fan motor shall not run below the following voltage. This results in reduced airflow operating range described in the following table.

Table 9 - Minimum air flow (m³/h)function electric heater

m ³ /h Unit Size	Electric heater capacity			
	500 W	750 W	1000 W	1500 W
FEU/FCU 100	90	135	185	275

Voltage Range

2 and 4 pipe cooling or heating

FEU/FCU 100	Voltage	Airflow range
V min	3	100 %
V medium	5.5	
V max	10	

Minimum voltage

2 pipe electric heat heating mode

	FEU 100	FEU 100
Electric heater capacity	1500 W	500-750-1000 W
V min	5	3.7
Airflow range	71%	90%

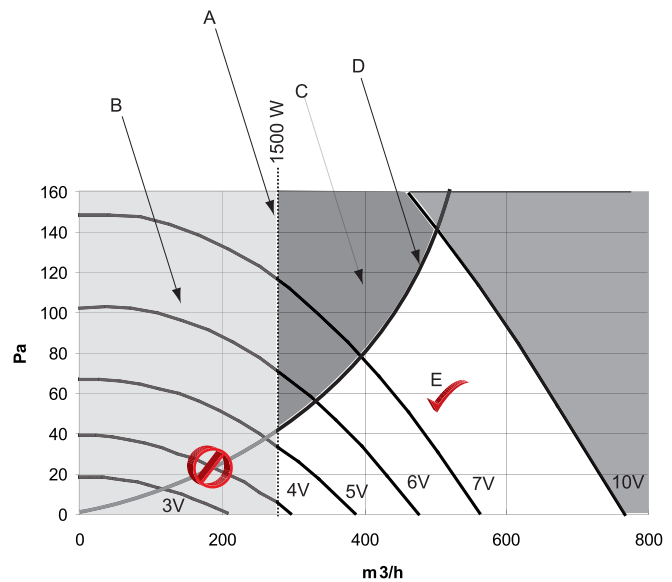
Speed Range

2 and 4 pipe cooling or heating

FCU 100	without electric heater	with electric heater
Minimum speed	1	2

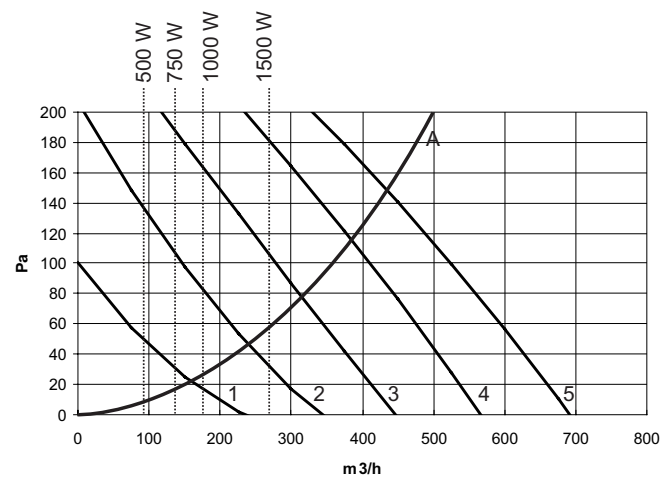
General Data

Figure 18 - Example with FEU 100 with Electric heater 1500 W



- A = 275 m³/hr minimum airflow for 1500 W
- B = Not allowed operating system
- C = Special selection operating system zone
- D = Airflow pressure drop system curve
- E = Standard selection operating system zone

Figure 19 - Example with FCU 100 with Electric heater 500-750-1000-1500 W



- A = 275 m³/hr minimum airflow for 1500 W
- B = Airflow pressure drop system curve

If 500/750 W electric heater all the speeds can be selected.

If 1000 W electric heater, speed 1 cannot be selected.

If 1500 W electric heater, speeds 1 and 2 cannot be selected.

Cooling Capacities

Table 10 - Cooling capacities, 2-pipe

Return air temp. / relative humidity	Entering - leaving water temp.	Standard Coil							High efficiency Coil						
		Airflow	m ³ /h	200	300	400	500	600	700	200	300	400	500	600	700
22°C / 50%	5-10°C	Tot. cap. kW	1.14	1.55	1.90	2.21	2.48	2.73	1.20	1.65	2.12	2.55	2.96	3.35	
		Sens. cap. kW	0.94	1.29	1.60	1.88	2.14	2.38	0.97	1.35	1.73	2.09	2.44	2.78	
		Water flow l/h	197	268	328	381	428	470	208	285	365	440	510	577	
	5.5-11°C	WPD kPa	4	7	10	13	16	19	3	5	8	12	15	19	
		Tot. cap. kW	0.98	1.36	1.68	1.97	2.22	2.45	1.11	1.44	1.86	2.26	2.63	2.99	
		Sens. cap. kW	0.87	1.20	1.50	1.77	2.02	2.25	0.92	1.25	1.61	1.95	2.29	2.62	
	6-12°C	Water flow l/h	154	213	264	308	348	383	174	225	291	353	413	469	
		WPD kPa	3	5	7	9	11	13	2	4	6	8	10	13	
		Tot. cap. kW	0.90	1.18	1.48	1.74	1.97	2.19	1.02	1.32	1.60	1.97	2.32	2.65	
	7-12°C	Sens. cap. kW	0.83	1.12	1.41	1.67	1.92	2.14	0.88	1.20	1.49	1.83	2.15	2.47	
		Water flow l/h	130	169	212	250	283	314	147	190	229	283	333	381	
		WPD kPa	2	3	5	6	8	9	2	3	4	5	7	9	
8-13°C	Tot. cap. kW	0.86	1.19	1.48	1.73	1.95	2.16	0.96	1.25	1.61	1.96	2.29	2.61		
	Sens. cap. kW	0.82	1.13	1.41	1.67	1.91	2.13	0.86	1.17	1.50	1.83	2.14	2.45		
	Water flow l/h	149	206	254	298	336	372	166	216	278	338	395	450		
24°C / 50%	5-10°C	WPD kPa	3	5	7	9	11	13	2	3	5	7	10	12	
		Tot. cap. kW	0.75	1.01	1.27	1.49	1.70	1.89	0.85	1.12	1.35	1.65	1.94	2.23	
		Sens. cap. kW	0.75	1.01	1.27	1.49	1.70	1.89	0.81	1.11	1.35	1.65	1.94	2.23	
	5.5-11°C	Water flow l/h	130	175	218	258	294	327	147	193	233	285	335	384	
		WPD kPa	2	4	5	7	8	10	2	3	4	5	7	9	
		Tot. cap. kW	1.48	1.99	2.43	2.80	3.13	3.43	1.52	2.15	2.73	3.26	3.76	4.24	
	6-12°C	Sens. cap. kW	1.09	1.48	1.82	2.13	2.42	2.68	1.11	1.56	1.99	2.40	2.78	3.16	
		Water flow l/h	255	344	418	483	540	591	262	371	470	562	649	731	
		WPD kPa	7	11	15	19	23	27	5	9	13	18	23	28	
	7-12°C	Tot. cap. kW	1.32	1.79	2.19	2.53	2.84	3.11	1.37	1.92	2.45	2.94	3.41	3.85	
		Sens. cap. kW	1.01	1.39	1.72	2.01	2.29	2.54	1.04	1.46	1.86	2.25	2.62	2.99	
		Water flow l/h	207	280	343	397	444	487	215	301	384	461	534	603	
8-13°C	WPD kPa	5	8	11	14	17	20	3	6	9	13	16	20		
	Tot. cap. kW	1.15	1.58	1.95	2.26	2.55	2.80	1.27	1.67	2.17	2.62	3.05	3.46		
	Sens. cap. kW	0.94	1.30	1.61	1.90	2.16	2.41	0.99	1.35	1.74	2.11	2.47	2.82		
5-10°C	Water flow l/h	165	227	280	325	366	402	182	240	311	377	439	497		
	WPD kPa	3	6	8	10	12	14	2	4	6	9	12	14		
	Tot. cap. kW	1.17	1.58	1.93	2.24	2.51	2.75	1.21	1.69	2.16	2.60	3.01	3.40		
5.5-11°C	Sens. cap. kW	0.95	1.30	1.61	1.89	2.15	2.39	0.96	1.36	1.74	2.10	2.45	2.79		
	Water flow l/h	201	273	333	386	433	475	208	292	372	447	518	585		
	WPD kPa	5	8	10	13	16	19	3	6	9	12	16	19		
6-12°C	Tot. cap. kW	1.02	1.39	1.70	1.98	2.22	2.45	1.08	1.47	1.89	2.28	2.65	3.00		
	Sens. cap. kW	0.88	1.21	1.51	1.78	2.03	2.26	0.91	1.26	1.62	1.96	2.30	2.62		
	Water flow l/h	175	239	293	341	383	422	186	253	325	393	456	517		
7-12°C	WPD kPa	4	6	8	11	13	16	3	4	7	10	12	15		
	Tot. cap. kW	1.83	2.46	3.00	3.46	3.87	4.23	1.90	2.67	3.37	4.02	4.64	5.22		
	Sens. cap. kW	1.23	1.67	2.06	2.40	2.71	3.00	1.27	1.78	2.25	2.71	3.14	3.56		
8-13°C	Water flow l/h	316	425	517	597	667	730	328	460	581	693	799	900		
	WPD kPa	10	16	22	28	33	39	7	13	19	26	33	41		
	Tot. cap. kW	1.68	2.27	2.76	3.18	3.56	3.89	1.74	2.46	3.11	3.72	4.29	4.82		
5-10°C	Sens. cap. kW	1.17	1.58	1.95	2.28	2.58	2.85	1.19	1.68	2.14	2.57	2.98	3.38		
	Water flow l/h	264	356	433	499	557	609	273	386	488	582	671	756		
	WPD kPa	7	12	16	20	25	29	5	9	14	19	24	30		
6-12°C	Tot. cap. kW	1.52	2.05	2.50	2.89	3.23	3.54	1.55	2.22	2.83	3.38	3.91	4.41		
	Sens. cap. kW	1.09	1.49	1.84	2.15	2.44	2.71	1.11	1.57	2.01	2.42	2.82	3.20		
	Water flow l/h	218	295	360	415	464	508	223	319	406	486	562	633		
7-12°C	WPD kPa	5	9	12	15	18	21	4	7	10	14	18	22		
	Tot. cap. kW	1.52	2.04	2.48	2.86	3.19	3.49	1.58	2.22	2.80	3.34	3.85	4.33		
	Sens. cap. kW	1.09	1.48	1.83	2.14	2.42	2.69	1.12	1.57	2.00	2.40	2.79	3.17		
8-13°C	Water flow l/h	262	352	427	492	550	601	272	382	483	576	663	746		
	WPD kPa	7	11	16	20	24	28	5	9	14	19	24	29		
	Tot. cap. kW	1.36	1.82	2.21	2.55	2.85	3.12	1.40	1.97	2.50	2.98	3.44	3.88		
5-10°C	Sens. cap. kW	1.02	1.39	1.72	2.01	2.29	2.54	1.04	1.47	1.87	2.25	2.62	2.98		
	Water flow l/h	234	314	382	440	492	538	241	340	431	515	593	668		
	WPD kPa	6	9	13	17	20	23	4	7	11	15	20	24		
5.5-11°C	Tot. cap. kW	2.18	2.95	3.59	4.15	4.64	5.08	2.28	3.19	4.03	4.81	5.54	6.24		
	Sens. cap. kW	1.37	1.86	2.28	2.66	3.01	3.32	1.42	1.98	2.51	3.01	3.49	3.95		
	Water flow l/h	377	508	619	715	800	876	392	550	694	829	956	1076		
6-12°C	WPD kPa	13	21	29	37	45	52	10	17	26	35	45	56		
	Tot. cap. kW	2.05	2.76	3.37	3.88	4.34	4.74	2.14	3.00	3.79	4.52	5.21	5.86		
	Sens. cap. kW	1.31	1.78	2.18	2.54	2.87	3.17	1.35	1.89	2.40	2.88	3.33	3.78		
7-12°C	Water flow l/h	322	433	527	609	680	743	335	470	593	708	816	919		
	WPD kPa	10	16	22	28	34	40	7	13	20	27	34	42		
	Tot. cap. kW	1.91	2.57	3.12	3.60	4.02	4.39	1.98	2.79	3.53	4.21	4.85	5.46		
8-13°C	Sens. cap. kW	1.25	1.69	2.08	2.42	2.74	3.03	1.28	1.80	2.28	2.74	3.18	3.60		
	Water flow l/h	274	369	448	517	577	630	285	401	507	605	697	784		
	WPD kPa	8	12	17	22	26	30	5	10	15	20	26	32		
5-10°C	Tot. cap. kW	1.89	2.54	3.08	3.55	3.96	4.33	1.98	2.76	3.48	4.14	4.77	5.36		
	Sens. cap. kW	1.24	1.68	2.06	2.40	2.72	3.00	1.27	1.78	2.26	2.71	3.14	3.56		
	Water flow l/h	326	438	531	612	683	746	341	476	600	714	822	924		
6-12°C	WPD kPa	10	16	23	29	34	40	7	13	20	27	35	43		
	Tot. cap. kW	1.73	2.32	2.81	3.23	3.60	3.93	1.81	2.53	3.18	3.79	4.36	4.89		
	Sens. cap. kW	1.17	1.58	1.95	2.27	2.57	2.84	1.20	1.68	2.13	2.56	2.97	3.36		
7-12°C	Water flow l/h	299	400	485	557	621	677	312	436	549	653	751	844		
	WPD kPa	9	14	20	25	29	34	6	12	17	23	30	36		

Tot. cap. Total cooling capacity at high speed
 Sens. cap. Sensible cooling capacity at high speed
 WPD Water pressure drop

Cooling Capacities

Table 11 - Cooling capacities, 4-pipe

Return air temp. / relative humidity	Entering - leaving water temp.	Standard Coil							High efficiency Coil						
		Airflow	m ³ /h	200	300	400	500	600	700	200	300	400	500	600	700
22°C / 50%	5-10°C	Tot. cap.	kW	1.14	1.55	1.90	2.21	2.48	2.73	1.26	1.72	2.12	2.47	2.78	3.06
		Sens. cap.	kW	0.94	1.29	1.60	1.88	2.14	2.38	1.00	1.37	1.71	2.02	2.30	2.56
		Water flow	l/h	197	268	328	381	428	470	217	297	365	425	479	527
	5.5-11°C	WPD	kPa	4	7	10	13	16	19	7	12	17	22	27	32
		Tot. cap.	kW	0.98	1.36	1.68	1.97	2.22	2.45	1.11	1.53	1.89	2.21	2.50	2.76
		Sens. cap.	kW	0.87	1.20	1.50	1.77	2.02	2.25	0.93	1.29	1.61	1.90	2.17	2.42
	6-12°C	Water flow	l/h	154	213	264	308	348	383	174	240	297	347	392	432
		WPD	kPa	3	5	7	9	11	13	5	8	12	16	19	23
		Tot. cap.	kW	0.90	1.18	1.48	1.74	1.97	2.19	0.98	1.34	1.68	1.97	2.24	2.48
	7-12°C	Sens. cap.	kW	0.83	1.12	1.41	1.67	1.92	2.14	0.87	1.20	1.51	1.80	2.06	2.30
		Water flow	l/h	130	169	212	250	283	314	141	193	241	283	321	356
		WPD	kPa	2	3	5	6	8	9	3	6	8	11	14	16
8-13°C	Tot. cap.	kW	0.86	1.19	1.48	1.73	1.95	2.16	0.96	1.32	1.64	1.92	2.17	2.40	
	Sens. cap.	kW	0.82	1.13	1.41	1.67	1.91	2.13	0.86	1.19	1.50	1.77	2.03	2.27	
	Water flow	l/h	149	206	254	298	336	372	165	228	283	331	375	414	
24°C / 50%	5-10°C	WPD	kPa	3	5	7	9	11	13	4	8	11	14	18	21
		Tot. cap.	kW	0.75	1.01	1.27	1.49	1.70	1.89	0.83	1.15	1.43	1.69	1.85	2.06
		Sens. cap.	kW	0.75	1.01	1.27	1.49	1.70	1.89	0.80	1.12	1.41	1.67	1.85	2.06
	5.5-11°C	Water flow	l/h	130	175	218	258	294	327	143	198	247	291	319	355
		WPD	kPa	2	4	5	7	8	10	3	6	9	12	13	16
		Tot. cap.	kW	1.48	1.99	2.43	2.80	3.13	3.43	1.61	2.19	2.68	3.12	3.50	3.85
	6-12°C	Sens. cap.	kW	1.09	1.48	1.82	2.13	2.42	2.68	1.15	1.58	1.96	2.30	2.61	2.90
		Water flow	l/h	255	344	418	483	540	591	277	377	463	537	604	663
		WPD	kPa	7	11	15	19	23	27	11	18	26	33	41	48
	7-12°C	Tot. cap.	kW	1.32	1.79	2.19	2.53	2.84	3.11	1.46	1.99	2.44	2.84	3.19	3.51
		Sens. cap.	kW	1.01	1.39	1.72	2.01	2.29	2.54	1.08	1.48	1.84	2.17	2.47	2.75
		Water flow	l/h	207	280	343	397	444	487	228	312	383	445	500	550
8-13°C	WPD	kPa	5	8	11	14	17	20	8	13	19	24	29	35	
	Tot. cap.	kW	1.15	1.58	1.95	2.26	2.55	2.80	1.30	1.78	2.20	2.56	2.89	3.18	
	Sens. cap.	kW	0.94	1.30	1.61	1.90	2.16	2.41	1.01	1.39	1.74	2.05	2.34	2.60	
26°C / 50%	5-10°C	Water flow	l/h	165	227	280	325	366	402	186	256	316	368	414	456
		WPD	kPa	3	6	8	10	12	14	5	9	13	17	21	25
		Tot. cap.	kW	1.17	1.58	1.93	2.24	2.51	2.75	1.29	1.75	2.15	2.50	2.81	3.09
	5.5-11°C	Sens. cap.	kW	0.95	1.30	1.61	1.89	2.15	2.39	1.00	1.38	1.71	2.02	2.30	2.57
		Water flow	l/h	201	273	333	386	433	475	222	302	370	431	484	533
		WPD	kPa	5	8	10	13	16	19	7	12	17	23	28	33
	6-12°C	Tot. cap.	kW	1.02	1.39	1.70	1.98	2.22	2.45	1.13	1.54	1.89	2.20	2.48	2.72
		Sens. cap.	kW	0.88	1.21	1.51	1.78	2.03	2.26	0.93	1.29	1.61	1.90	2.17	2.42
		Water flow	l/h	175	239	293	341	383	422	194	265	326	380	428	472
	7-12°C	WPD	kPa	4	6	8	11	13	16	6	10	14	18	22	27
		Tot. cap.	kW	1.83	2.46	3.00	3.46	3.87	4.23	1.96	2.67	3.28	3.81	4.29	4.72
		Sens. cap.	kW	1.23	1.67	2.06	2.40	2.71	3.00	1.30	1.78	2.20	2.58	2.93	3.25
8-13°C	Water flow	l/h	316	425	517	597	667	730	337	460	565	658	739	813	
	WPD	kPa	10	16	22	28	33	39	15	25	36	47	58	68	
	Tot. cap.	kW	1.68	2.27	2.76	3.18	3.56	3.89	1.83	2.49	3.05	3.54	3.98	4.37	
5-10°C	Sens. cap.	kW	1.17	1.58	1.95	2.28	2.58	2.85	1.24	1.69	2.09	2.46	2.79	3.09	
	Water flow	l/h	264	356	433	499	557	609	287	390	478	555	624	685	
	WPD	kPa	7	12	16	20	25	29	11	19	27	35	43	51	
28°C / 50%	5-10°C	Tot. cap.	kW	1.52	2.05	2.50	2.89	3.23	3.54	1.68	2.28	2.80	3.25	3.65	4.01
		Sens. cap.	kW	1.09	1.49	1.84	2.15	2.44	2.71	1.16	1.60	1.98	2.33	2.65	2.94
		Water flow	l/h	218	295	360	415	464	508	241	328	402	467	524	575
	5.5-11°C	WPD	kPa	5	9	12	15	18	21	8	14	20	26	32	38
		Tot. cap.	kW	1.52	2.04	2.48	2.86	3.19	3.49	1.65	2.24	2.74	3.18	3.57	3.91
		Sens. cap.	kW	1.09	1.48	1.83	2.14	2.42	2.69	1.15	1.58	1.96	2.30	2.61	2.90
	6-12°C	Water flow	l/h	262	352	427	492	550	601	285	386	473	548	615	674
		WPD	kPa	7	11	16	20	24	28	11	19	27	35	42	49
		Tot. cap.	kW	1.36	1.82	2.21	2.55	2.85	3.12	1.48	2.01	2.46	2.85	3.20	3.51
	7-12°C	Sens. cap.	kW	1.02	1.39	1.72	2.01	2.29	2.54	1.08	1.48	1.83	2.16	2.46	2.73
		Water flow	l/h	234	314	382	440	492	538	256	346	424	491	551	604
		WPD	kPa	6	9	13	17	20	23	9	16	22	29	35	41
8-13°C	Tot. cap.	kW	2.18	2.95	3.59	4.15	4.64	5.08	2.32	3.17	3.90	4.54	5.12	5.64	
	Sens. cap.	kW	1.37	1.86	2.28	2.66	3.01	3.32	1.44	1.97	2.44	2.86	3.24	3.59	
	Water flow	l/h	377	508	619	715	800	876	399	546	672	783	882	971	
28°C / 50%	5-10°C	WPD	kPa	13	21	29	37	45	52	20	34	49	64	79	93
		Tot. cap.	kW	2.05	2.76	3.37	3.88	4.34	4.74	2.20	3.00	3.68	4.28	4.81	5.29
		Sens. cap.	kW	1.31	1.78	2.18	2.54	2.87	3.17	1.38	1.89	2.34	2.74	3.10	3.44
	5.5-11°C	Water flow	l/h	322	433	527	609	680	743	344	469	577	671	754	829
		WPD	kPa	10	16	22	28	34	40	15	26	38	49	60	71
		Tot. cap.	kW	1.91	2.57	3.12	3.60	4.02	4.39	2.07	2.81	3.45	4.00	4.49	4.93
	6-12°C	Sens. cap.	kW	1.25	1.69	2.08	2.42	2.74	3.03	1.32	1.80	2.23	2.62	2.97	3.29
		Water flow	l/h	274	369	448	517	577	630	297	404	495	575	646	709
		WPD	kPa	8	12	17	22	26	30	12	20	29	37	46	54
	7-12°C	Tot. cap.	kW	1.89	2.54	3.08	3.55	3.96	4.33	2.03	2.75	3.38	3.92	4.40	4.83
		Sens. cap.	kW	1.24	1.68	2.06	2.40	2.72	3.00	1.30	1.78	2.20	2.58	2.93	3.25
		Water flow	l/h	326	438	531	612	683	746	349	474	582	675	758	833
8-13°C	WPD	kPa	10	16	23	29	34	40	16	27	38	50	61	71	
	Tot. cap.	kW	1.73	2.32	2.81	3.23	3.60	3.93	1.87	2.53	3.10	3.59	4.02	4.41	
	Sens. cap.	kW	1.17	1.58	1.95	2.27	2.57	2.84	1.23	1.68	2.08	2.44	2.77	3.07	
	Water flow	l/h	299	400	485	557	621	677	322	436	534	618	693	760	
	WPD	kPa	9	14	20	25	29	34	14	23	33	43	52	61	

Tot. cap. Total cooling capacity
 Sens. cap. Sensible cooling capacity
 WPD Water pressure drop

Heating Capacities

Table 12 - Heating capacities, 2-pipe

		Standard Coil							High efficiency Coil						
		Airflow	m ³ /h	200	300	400	500	600	700	200	300	400	500	600	700
Return air temperature 20C 2-pipe (heating coil)	50-45°C	Capacity	kW	1.83	2.56	3.23	3.84	4.41	4.94	1.84	2.64	3.41	4.16	4.88	5.59
		Water flow	l/h	293	418	532	637	734	825	296	432	563	691	816	939
		WPD	Pa	7	13	19	26	33	40	7	14	21	30	39	50
	60-50°C	Capacity	kW	2.32	3.25	4.09	4.87	5.58	6.24	2.34	3.36	4.35	5.30	6.22	7.13
		Water flow	l/h	189	268	340	406	468	525	191	278	362	444	524	602
		WPD	Pa	3	6	9	12	15	19	3	7	10	14	19	24
	70-60°C	Capacity	kW	2.94	4.14	5.23	6.23	7.16	8.02	2.96	4.27	5.53	6.76	7.95	9.12
		Water flow	l/h	242	344	438	524	603	678	245	357	464	569	672	773
		WPD	Pa	5	9	14	19	24	29	5	10	15	22	28	36
	80-60°C	Capacity	kW	3.30	4.63	5.83	6.92	7.93	8.86	3.33	4.81	6.22	7.58	8.91	10.21
		Water flow	l/h	137	193	245	292	335	375	138	201	262	320	377	433
		WPD	Pa	2	4	5	7	9	11	2	4	6	8	11	14
	82-71°C	Capacity	kW	3.65	5.16	6.53	7.80	8.97	10.06	3.68	5.32	6.90	8.44	9.94	11.41
		Water flow	l/h	275	392	499	598	689	774	278	406	529	649	766	881
		WPD	Pa	6	12	17	23	30	36	6	12	19	27	35	45
	90-70°C	Capacity	kW	3.94	5.53	6.98	8.31	9.54	10.67	3.97	5.74	7.43	9.07	10.67	12.23
		Water flow	l/h	164	232	294	351	403	452	165	241	313	383	452	520
		WPD	Pa	3	5	7	10	12	15	3	5	8	11	15	18

Capacity Heating capacity
WPD Water pressure drop

Table 13 - Heating capacities, 4-pipe

		Standard Coil							High efficiency Coil						
		Airflow	m ³ /h	200	300	400	500	600	700	200	300	400	500	600	700
Return air temperature 20C 2-pipe (heating coil)	50-45°C	Capacity	kW	0.98	1.14	1.29	1.42	1.54	1.66	1.20	1.45	1.67	1.87	2.07	2.26
		Water flow	l/h	145	172	196	218	238	258	184	226	262	297	331	364
		WPD	Pa	3	4	4	5	6	6	7	10	13	15	18	21
	60-50°C	Capacity	kW	1.18	1.38	1.56	1.72	1.87	2.02	1.46	1.77	2.04	2.29	2.54	2.78
		Water flow	l/h	90	107	121	135	148	160	115	141	163	185	206	226
		WPD	Pa	1	2	2	3	3	3	3	5	6	7	8	10
	70-60°C	Capacity	kW	1.51	1.77	2.00	2.21	2.41	2.60	1.87	2.27	2.63	2.96	3.28	3.60
		Water flow	l/h	118	140	160	177	194	210	150	184	214	242	270	297
		WPD	Pa	2	3	3	4	4	5	5	7	9	11	13	15
	80-60°C	Capacity	kW	1.59	1.88	2.13	2.35	2.57	2.77	1.99	2.42	2.80	3.16	3.51	3.85
		Water flow	l/h	63	75	85	95	104	112	80	98	114	130	145	159
		WPD	Pa	1	1	1	2	2	2	2	3	3	4	5	6
	82-71°C	Capacity	kW	1.88	2.21	2.50	2.77	3.02	3.26	2.34	2.85	3.29	3.71	4.12	4.52
		Water flow	l/h	136	162	184	204	224	243	173	212	246	279	310	342
		WPD	Pa	3	3	4	5	5	6	6	9	11	14	16	19
	90-70°C	Capacity	kW	1.93	2.27	2.57	2.85	3.11	3.36	2.41	2.94	3.39	3.83	4.25	4.66
		Water flow	l/h	77	91	104	116	127	137	98	120	140	158	176	194
		WPD	Pa	1	1	2	2	2	3	3	4	5	6	7	8

Capacity Heating capacity
WPD Water pressure drop

External static pressure and airflow curves

Figure 20 - External Static Pressure - FEU with Standard coil

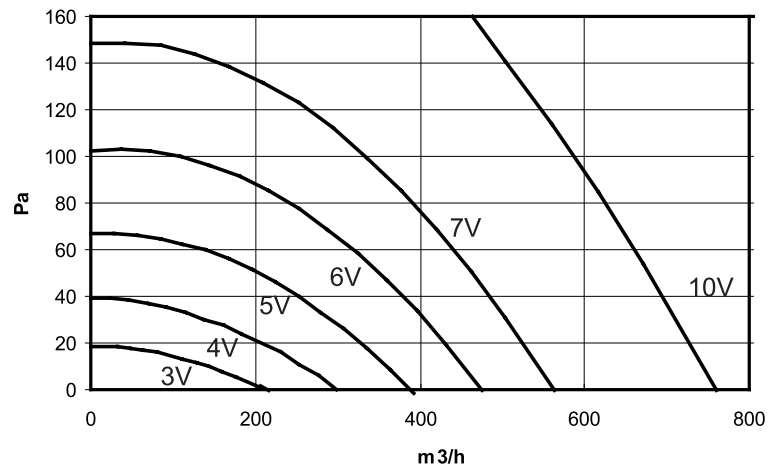
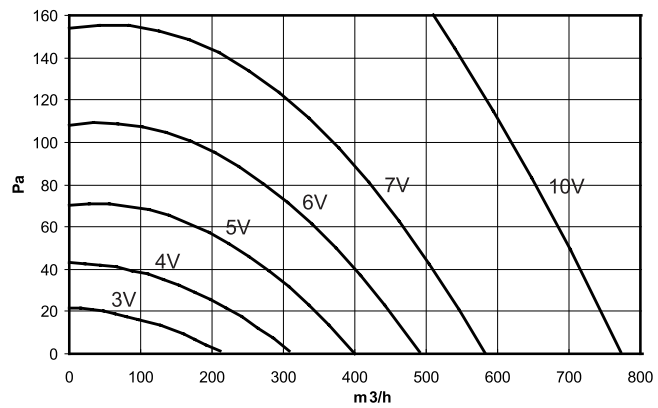


Figure 21 - External Static Pressure - FEU with high efficiency coil



External static pressure and airflow curves

Figure 22 - External Static Pressure - FCU with Standard coil

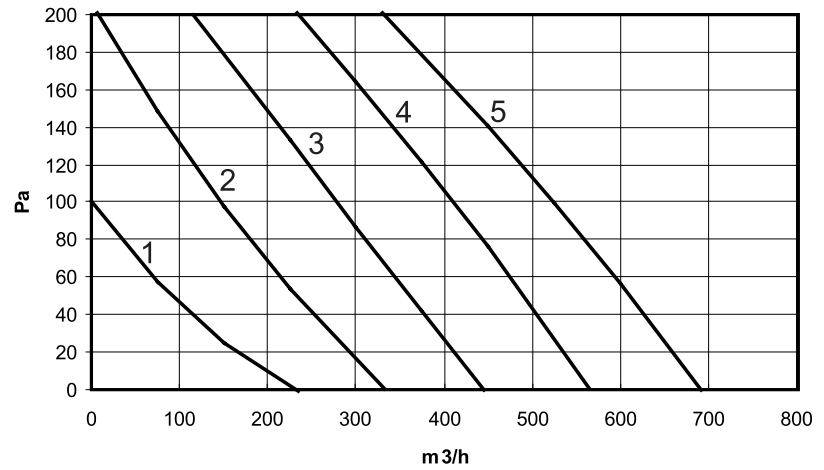
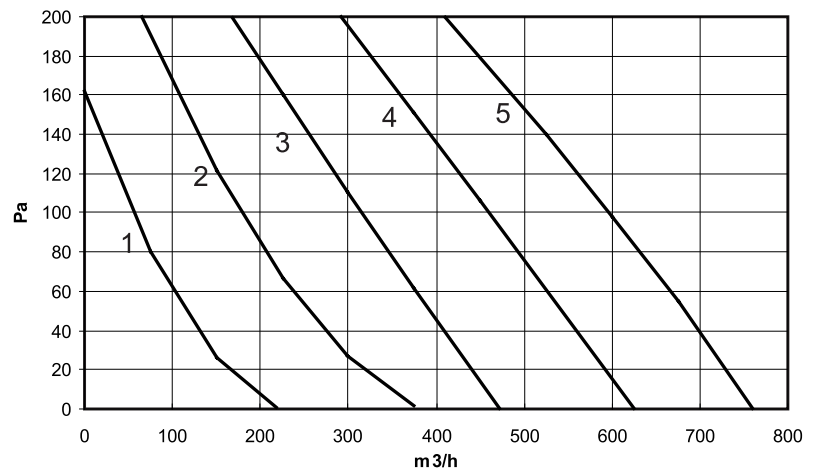


Figure 23 - External Static Pressure - FCU with high efficiency coil



External static pressure and airflow curves

Figure 24 - Power input - FEU with Standard coil

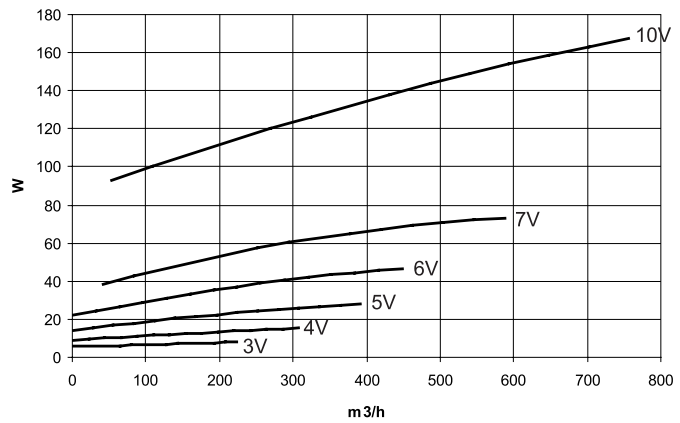
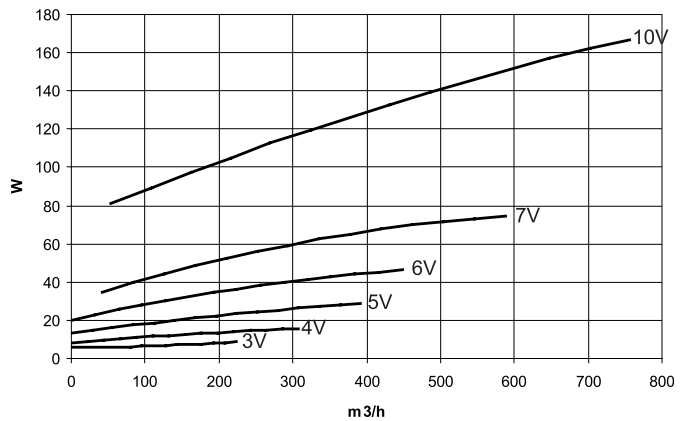


Figure 25 - Power input - FEU with high efficiency coil



External static pressure and airflow curves

Figure 26 - Power input - FCU with Standard coil

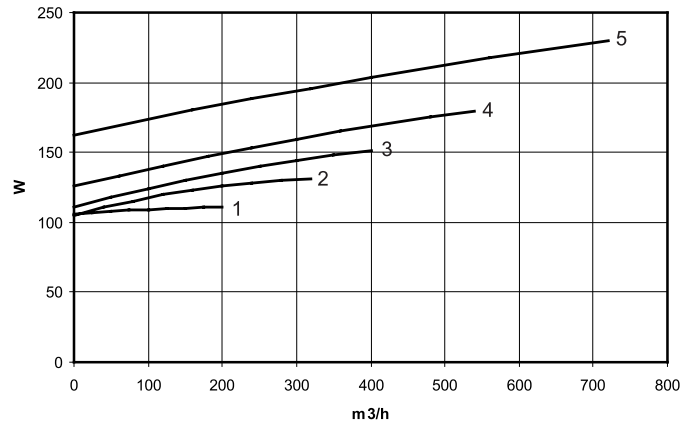
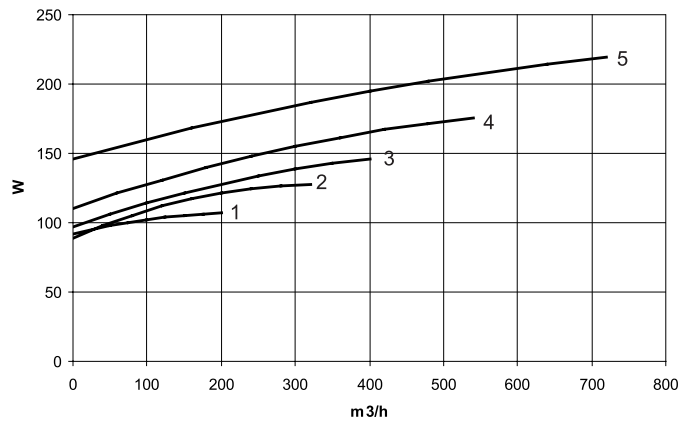
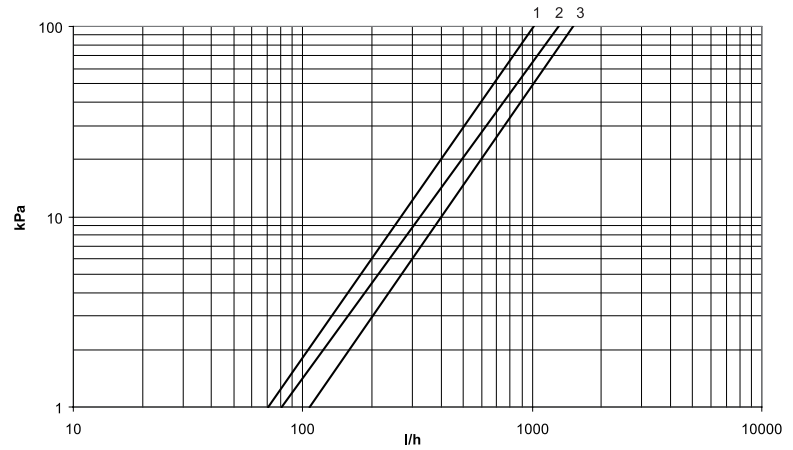


Figure 27 - Power input - FCU with high efficiency coil



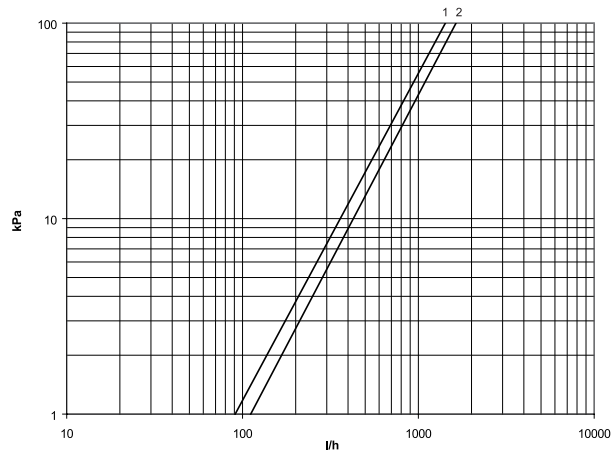
Water pressure drop curves

Figure 28 - Water pressure drop through the coils - Cooling mode



- 1 = 4-pipe high efficiency coil
- 2 = 2-pipe standard efficiency coil
- 3 = 2-pipe high efficiency coil

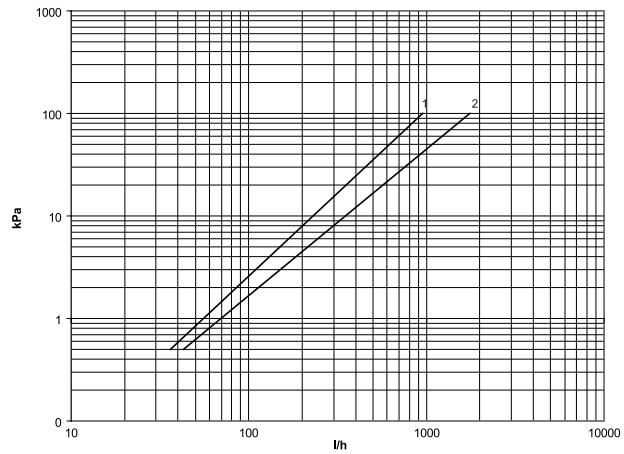
Figure 29- Water pressure drop through the coils - Heating mode, 2-pipe coil



- 1 = Standard coil
- 2 = High efficiency coil

Water pressure drop curves

Figure 30 - Water pressure drop through the coils - Heating mode, 4-pipe coil



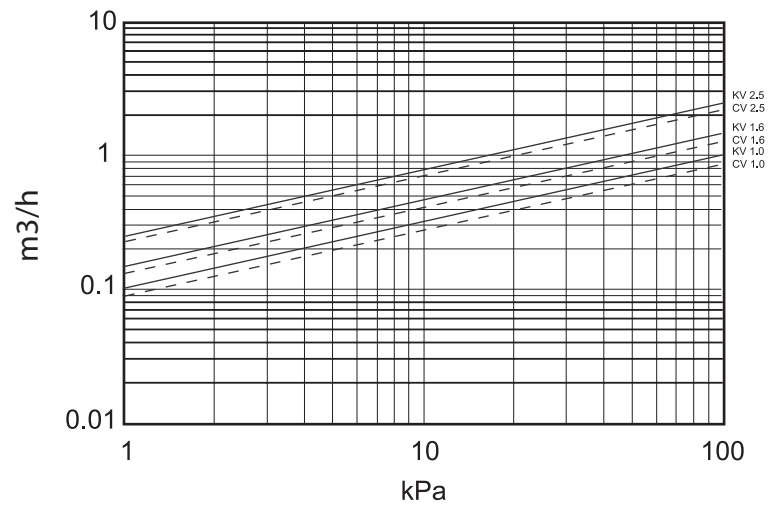
- 1 = High efficiency coil
- 2 = Standard coil

Water pressure drop curves

Table 14 - Pressure drop through the valves - FCD

	Cooling/heating (2-pipe coil)	Heating (4-pipe coil)
Connections (inches)	1/2	1/2
2-way on/off control Kv valve	1.60	1.0
2-way ZN523-525 control Kv valve	1.00	1.0
3-way on/off control Kv valve	1.60	1.0
3-way ZN 523-525 control Kv valve	1.00	1.0

Figure 31 - Pressure drop through the valves



Sound Levels

Sound levels, 2-pipe standard capacity coil
Unit with rectangular flange at the discharge side and EU3 filter, no inlet air connection

Unit size		FEU/FCU 100 2 & 4 pipes					FEU/FCU 100 2 & 4 pipes						
		STD					HE						
Coil		V	V	V	V	V	1	2	3	4	5		
Speed													
Airflow	m ³ /h	190	283	374	465	542	183	298	395	497	584		
ESP	Pa	11	25	43	67	90	10	28	49	78	107		
Inlet	125Hz	dB	37	44	50	55	59	39	45	51	56	59	
	250Hz	dB	35	43	49	54	57	38	44	50	55	57	
	500Hz	dB	32	38	44	49	52	34	40	45	50	52	
	1kHz	dB	25	33	40	44	47	28	35	41	45	47	
	2kHz	dB	15	24	32	38	43	18	26	33	39	43	
	4kHz	dB	16	22	26	32	39	18	23	27	33	39	
	Global Lin	dB	40	47	53	58	62	42	49	54	59	62	
	Global Lw	dB(A)	31	39	45	50	54	34	41	47	51	54	
	Radiated	125Hz	dB	43	50	56	61	64	46	52	57	62	64
		250Hz	dB	33	41	47	52	54	36	43	49	53	54
500Hz		dB	32	39	44	49	53	34	40	46	50	53	
1kHz		dB	31	39	45	49	52	34	40	46	50	52	
2kHz		dB	19	30	39	45	49	23	33	41	46	49	
4kHz		dB	15	24	32	39	44	17	26	34	41	44	
Global Lin		dB	44	52	57	62	65	47	53	58	63	65	
Global Lw		dB(A)	33	42	48	53	56	36	43	49	54	56	
Outlet		125Hz	dB	36	43	49	54	57	39	45	50	55	57
		250Hz	dB	35	43	49	54	57	38	45	51	55	57
	500Hz	dB	33	40	46	51	54	36	42	47	52	54	
	1kHz	dB	29	37	43	48	50	32	38	44	48	50	
	2kHz	dB	20	31	39	45	47	24	33	40	45	47	
	4kHz	dB	15	20	26	34	41	16	21	27	35	41	
	Global Lin	dB	40	48	54	59	62	43	49	55	59	62	
Global Lw	dB(A)	34	41	48	53	56	37	43	49	54	56		
Unit	Global Lin	dB	47	54	60	65	68	49	55	61	66	68	
	Global Lw	dB(A)	38	46	52	57	60	41	47	53	58	60	
Sound pressure levels	Global Lp	dB(A)	18	26	32	37	40	21	27	33	38	40	
	NC level		12	20	26	31	33	15	22	27	32	33	
	NR level		14	22	28	32	35	17	23	29	33	35	

Sound power levels according to Eurovent specification 8/2 (ISO 3741/88) and Eurovent Certification
 Sound pressure calculated from sound power levels with an hypothetical room acoustic attenuation of 20dB
 Following a system curve 400 m³/h, 50 Pa
 Noise level tolerance +/- 2dB

Model number

Digit 1: Manufacturing Location

E - Epinal

Digit 2-3-4: Unit Type

FCU - Horizontal Ducted Fan Coil

FEU - Horizontal Ducted Fan Coil with EC motor

Digit 5-6-7: Unit Size

100 - Unit size 100

Digit 8: Product Design Sequence

Digit 10: Unit Voltage

1 - 230V/50Hz/1Ph

Digit 11: Coil Type

A - 2-pipe cooling only, low water pressure drop

B - 2-pipe heating only, low water pressure drop

C - 2-pipe cooling / heating (changeover) only, low water pressure drop

D - 4-pipe cooling + heating, low water pressure drop

Digit 12: Coil Fin Type

X - Aluminum (Standard)

1 - Epoxy coated Aluminum

Digit 13: Coil Selection

X - Standard

A - High capacity (2-pipe and 4-pipe)

Digit 14: Fan Motor Type

X - Standard 5 speed AC motor / Standard EC motor

Digit 15-16-17: Factory Wired Fan Speed Selection

1-2-3 - Speed 1-2-3

....

....

3-4-5 - Speed 3-4-5

Digit 19: Customer connection (facing the airflow)

R - Right (water & electrical)

L - Left (water & electrical)

Digit 20-21: Literature Language

FR - French

....

....

E4 - English

Digit 22: Packaging

X - Standard

Digit 23: Electric Heater Type

W - Without

1 - 500 W Bare wire resistive element(s) with 2 overheat protections

2 - 750 W Bare wire resistive elements(s) with 2 overheat protections

3 - 1000 W

4 - 1500 W

Digit 24: Electric Heater Control

X - Standard

A - Solid state relay

Digit 25: Water Valve Type

W - Without

1 - Valve connections for site installation (terminal blocks only)

2 - 2-way valve(s)

3 - 3-way / 4 port valve(s)

Digit 28: Fan On/off Control (without valve or electric heater)

W - Without

1 - Remote fan switch (L): 3 speed fan switch

2 - Remote, wall thermostat (M): 3 speed fan switch + 1 stage thermostat + heating/cooling selector

Model number

Digit 29: Water Valve / Electric Heater Control (Fan runs continuously)

W - Without

A - Remote, wall thermostat (N): 3 speed fan switch, 1 stage thermostat + heating/cooling selector

B - Remote, wall thermostat (P): 3 speed fan switch, 2 stage auto thermostat

C - Remote, wall thermostat (P) + pilot relay for the electric heater (centralized)

D - Remote, wall thermostat (E) + pilot relay for the electric heater (centralized)

E - Remote, wall thermostat (P) + pilot relay and changeover sensor for the electric heater (local management)

F - Remote, wall thermostat (E) + pilot relay and changeover sensor for the electric heater (local management)

Digit 31: Trane DDC Control

W - Without

A - Mounting and configuration: ZN523 cascade control, 230 V hot wax actuator(s) and valve(s)

B - Mounting and configuration: ZN523 zone control, 230 V hot wax actuator(s) and valve(s)

C - Mounting and configuration: ZN523 cascade control, 230 V 3 floating point actuator(s) and valve(s)

D - Mounting and configuration: ZN523 zone control, 230 V 3 floating point actuator(s) and valve(s)

E - Empty control panel for Zn control + 230 V 3 floating point actuator(s)

F - Empty control panel for Zn control + 230 V hot wax actuator(s)

1 - Mounting and configuration: ZN525 cascade control, 230 V hot wax actuator(s) and valve(s)

2 - Mounting and configuration: ZN525 zone control, 230 V hot wax actuator(s) and valve(s)

3 - Mounting and configuration: ZN525 cascade control, 230 V 3 floating point actuator(s) and valve(s)

4 - Mounting and configuration: ZN525 zone control, 230 V 3 floating point actuator(s) and valve(s)

Digit 32: Other DDC controls

W - Without

K - Supplier controller mounted for manufacturing (special features)

Digit 33: Rover Software Design Sequence

Digit 36: Return Air Duct Connection Type

Digit 37: Discharge Air Duct Connection Type

Digit 38: Fresh Air Connection

W - Without

1 - Inlet, D99 mm, control panel opposite side

2 - Inlet, D99 mm + 30 m³/h fresh air controller, control panel opposite side

3 - Inlet, D99 mm + 45 m³/h fresh air controller, control panel opposite side

4 - Inlet, D124 mm, control panel opposite side

5 - Inlet, D124 mm + 60-130 m³/h fresh air controller, control panel opposite side

Digit 40: Air Filtration

W - Without

3 - Cleanable EU3

Digit 41: Condensate pump

W - Without

A - Condensate pump (10 l/h)

Digit 42: Power Supply Protection

W - Without

1 - Mains power supply fuse (100% with ZN523 or ZN525)

Digit 44: Flexible hose pipe

W - Without

F - Flexible hose pipe

Digit 46: Customer Water Connections

X - Standard (flat faced sealing)

Digit 48: Bushing Mount Rubber

W - Without

A - Set of 4 pieces

Digit 50: Special

W - Without

S - Special features

Notes



TRANE®

Cooling and Heating
Systems and Services



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Literature Order Number	FIN-PRC010-E4
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Date	0810
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Supersedes	FIN-PRC010-E4_0410
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